Refine Search

Search Results -

Term	Documents
(102 NOT 103).PGPB,USPT,USOC,EPAB,JPAB,DWPI.	78
(L102 NOT L103).PGPB,USPT,USOC,EPAB,JPAB,DWPI.	78

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L104

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Tuesday, January 22, 2008 Purge Queries | Printable Copy | Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=AND		
L104	L102 not L103	78	L104
L103	L102@ay>2003	43	L103
L102	L100 and (filter.clm.)	121	L102
L101	L100 and filter.clm.	121	L101
L100	L99 and (vein or ven$)	1747	L100
L99	L98 and trap$	3283	L99
L98	L96 and L97	13154	L98
L97	filter and blood	151063	L97
L96	myoblobin or hemoglobin	30586	L96
L95	20020028201	2	L95
L94	5893869.pn.	2	L94

L93	L92 and biomarker.clm.	0	L93
L92	chan-anthony.in.	14	L92
L91	yip-christine.in.	2	L91
L90	yip-victor.in.	16	L90
L89	L88 and biomarker.clm.	5	L89
L88	johnson.in.	89678	L88
L87	L86 and biomarker.clm.	1	L87
L86	poon.in.	1300	L86
L85	poon-terence.in.	0	L85
L84	L83 and biomarkers.clm.	2	L84
L83	yip-tai-tung.in.	79	L83
L82	rankin.in. and nucleotidic.clm. and linkage.clm.	1	L82
L81	jurk.in. and nucleotidic.clm. and linkage.clm.	1	L81
L80	vollmer.in. and nucleotidic.clm. and linkage.clm.	3	L80
L79	samulowitz.in. and nucleotidic.clm. and linkage.clm.	1	L79
L78	lipford.in. and nucleotidic.clm. and linkage.clm.	1	L78
L77	L76 and nucleotidic.clm.	2	L77
L76	L75 and linkage.clm.	31	L76
L75	krieg.in.	1639	L75
L74	L72 and (3'3' adj linkage)	3	L74
L73	L72 and 3'3' adj linkage	3	L73
L72	L71 and linkage	14	L72
L71	non-nucleotidic adj linker.clm.	14	L71
L70	3'3'.clm.	563451	L70
L69	3'3' adj linkage.clm.	35	L69
L68	3'3' adj linkage.clm.	35	L68
L67	chan.in. and hepatocellular	86	L67
L66	johnson-p.in. and hepatocellular	1	L66
L65	poon.in. and hepatocellular	10	L65
L64	L63 and hepatocellular	4	L64
L63	yip.in.	1732	L63
L62	L61 and (method near diagnos$ or method near determin$ or method near identi$ or method near analyz$ or method near target$)	1984	L62
L61	L60 and (sample or fluid or serum)	2515	L61
L60	L59 and (nucleotide.clm. or amino adj acid.clm. or protein.clm.)	2525	L60
L59	L58 and method	3066	L59
L58	L57 and (nucleotide or amino acid or protein)	3067	L58
L57	L56 and L26	3067	L57
L56	L24 and (dalton or kilodalton or kDa)	3790	L56
L55	L51 not L54	208	L55
L54	L51@py>2002	712	L54
L53	L51 not L52	486	L53

L52	L51@ay>2002	434	L52
L51	L50 (method near diagnos$ or method near determin$ or method near identi$ or method near analyz$ or method near target$)	920	L51
L50	L47 and (sample or fluid or serum)	1140	L50
L49	L47 and (sample or serum)	1140	L49
L48	L47@ay>2002	532	L48
L47	L46 and method	1141	L47
L46	L45 and (hepatocellular adj carcinoma)	1141	L46
L45	L43 and (nucleotide.clm. or amino adj acid.clm. or protein.clm.)	1141	L45
L44	L43@ay>2002	647	L44
L43	L42 and (dalton$ or kilodalton$)	1359	L43
L42	L38 and (daltons or dalton or kilodalton or kDa or (molecular adj weight near dalton))	2909	L42
L41	L39 not L40	28	L41
L40	L39@ay>2002	68	L40
L39	L38 and (hepatocellular adj carcinoma.clm. or hepato-cellular adj carcinoma.clm.)	96	L39
L38	L37 and method	2909	L38
L37	L36 and (nucleotide or amino acid or protein)	2910	L37
L36	L35 and L26	2910	L36
L35	L24 and L34	3600	L35
L34	daltons or dalton or kDA or (molecular adj weight near dalton)	113962	L34
L33	daltons or dalton or kDA or molecular adj weight near dalton	113962	L33
L32	L30 not L31	6	L32
L31	L30@ay>2002	15	L31
L30	L29 and (L24 near protein)	21	L30
L29	L28 and method	4745	L29
L28	L27 and (nucleotide or amino acid or protein)	4748	L28
L27	L24 and L25 and L26	4755	L27
L26	serum adj marker or serum adj biomarker or marker or biomarker	305573	L26
L25	daltons or dalton or kDA or da or molecular weight	1024782	L25
L24	hepatocellular adj carcinoma or hepato-cellular adj carcinoma	8708	L24
L23	L22@ay>2002	0	L23
L22	L21 and (dalton near nucleotide or kilodalton near nucleotide or kDa near nucleotide or Da near nucleotide or dalton near amino adj acid or kilodalton near amino adj acid or kDa near amino adj acid or Da near amino adj acid or dalton near protein or kilodalton near protein or kDa near protein or Da near protein)	171	L22
L21	L19 and sample	411	L21
L20	L19 and dalton or kilodalton	12269	L20
L19	L17 not L18	411	L19
L18	L17@ay>2002	279	L18
	L16 and (serum adj marker near amino adj acid or serum adj biomarker near		

L17	amino adj acid or marker near amino adj acid or biomarker near amino adj acid or serum adj marker near protein or serum adj biomarker near protein or marker near protein or biomarker near protein)	690	L17
L16	L15 and (hepatocellular adj carcinoma or HCC near hepatocellular adj carcinoma)	2085	L16
L15	L14 and (serum adj marker or serum adj biomarker or marker or biomarker)	2085	L15
L14	L11 and (nucleotide.clm. or amino adj acid.clm. or protein.clm.)	2085	L14
L13	L11 and protein.clm.	1259	L13
L12	L11 and (hepatocellular adj carcinoma.clm.)	86	L12
L11	L10 and hepatocellular adj carcinoma	2482	L11
L10	L9 and (dalton or kilodalton or kDa or Da)	2482	L10
L9	L8 and (method near diagnos$ or method near determin$ or method near identi$ or method near analyz$ or method near target$)	2482	L9
L8	L6 and method	3283	L8
L7	L6 and (sample or fluid or serum)	3283	L7
L6	L5 and (sample or fluid or serum or plasma)	3284	L6
L5	L1 and L2 and L3 and L4	3304	L5
L4	nucleotide or amino adj acid or protein	741296	L4
L3	serum adj marker or serum adj biomarker or marker or biomarker	305573	L3
L2	dalton or kilodalton or kDa or Da or ,000 near dalton or ,000 near Da	290723	L2
L1	hepatocellular adj carcinoma	8662	L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Term	Documents
AL-HOSSARY	3
AL-HOSSARIES	0
AL-HOSSARYS	0
AL-HOSSARY.IN..PGPB,USPT,USOC,EPAB,JPAB,DWPI.	3
(AL-HOSSARY.IN.).PGPB,USPT,USOC,EPAB,JPAB,DWPI.	3

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L1

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Tuesday, January 22, 2008 Purge Queries | Printable Copy | Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=AND			
L1	al-hossary.in.	3	L1

END OF SEARCH HISTORY

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  e au=hossary-al, a?
Ref    Items  Index-term
E1         3  AU=HOSSARI, M. A.
E2         1  AU=HOSSARY A.
E3         0  AU=HOSSARY-AL, A?
E4         1  AU=HOSSARY, A.
E5         1  AU=HOSSARY, A. M. EL
E6         1  AU=HOSSARY, M. A.
E7         1  AU=HOSSARY, M. A. A. EL-
E8         1  AU=HOSSATZADEH M
E9         2  AU=HOSSAY D
E10        1  AU=HOSSAY J-F
E11        1  AU=HOSSAY, PATRICK ROGER
E12       28  AU=HOSSBACH
E13        2  AU=HOSSBACH H
E14        9  AU=HOSSBACH J
E15        3  AU=HOSSBACH J.
E16        6  AU=HOSSBACH M
E17       11  AU=HOSSBACH M.
E18       12  AU=HOSSBACH MARKUS
E19        6  AU=HOSSBACH R
E20        1  AU=HOSSBACH R.
E21       11  AU=HOSSBACH T
E22        4  AU=HOSSBACH T W
E23       20  AU=HOSSBACH TODD W
E24        1  AU=HOSSBACH TODD W BATTELLE PACIFIC NW LAB
E25        7  AU=HOSSBACH TW
          Enter PAGE for more

?  s e1-e7
            3   AU=HOSSARI, M. A.
            1   AU=HOSSARY A.
            0   AU=HOSSARY-AL, A?
            1   AU=HOSSARY, A.
            1   AU=HOSSARY, A. M. EL
            1   AU=HOSSARY, M. A.
            1   AU=HOSSARY, M. A. A. EL-
S1          8   S E1-E7

?  s 1 and filter
Processing
Processing
Processing
Processing
Processing
Processing
Processing
     41602892   1
       768019   FILTER
S2     186169   S 1 AND FILTER

?  s s1 and filter
            8   S1
       768019   FILTER
S3          0   S S1 AND FILTER

?  s s1 and blood
            8   S1
     11947466   BLOOD
S4          0   S S1 AND BLOOD

?  d s
Set     Items   Description
```

```
S1          8   S E1-E7
S2     186169   S 1 AND FILTER
S3          0   S S1 AND FILTER
S4          0   S S1 AND BLOOD

?  s myoglobin
S5      69681   S MYOGLOBIN

?  s s5 and (filter or filtration)
        69681   S5
       768019   FILTER
       725036   FILTRATION
S6        881   S S5 AND (FILTER OR FILTRATION)

?  s s6 and (trap? or remov? or clear?)
Processing
Processing
          881   S6
       954158   TRAP?
      3289503   REMOV?
      3251546   CLEAR?
S7        234   S S6 AND (TRAP? OR REMOV? OR CLEAR?)

?  s s7 and blood
          234   S7
     11947466   BLOOD
S8        111   S S7 AND BLOOD

?  rd
>>>W:  Duplicate detection is not supported for File 393.
Duplicate detection is not supported for File 391.
Records from unsupported files will be retained in the RD set.
S9         70   RD  (UNIQUE ITEMS)

?  t s9/3,k/1-70
>>>W:  KWIC option is not available in file(s): 399
 9/3,K/1 (Item 1 from file: 5)  Links
   Fulltext available through:    STIC Full Text Retrieval Options
Biosis Previews(R)
(c) 2008 The Thomson Corporation. All rights reserved.
0020018798   Biosis No.: 200800065737
Renal clearance of quantum dots

Author: Choi Hak Soo; Liu Wenhao; Misra Preeti; Tanaka Eiichi; Zimmer John P; Ipe
Binil Itty; Bawendi Moungi G; Frangioni John V (Reprint)
Author Address: Beth Israel Deaconess Med Ctr, Dept Med, Div Hematol Oncol, 330
Brookline Ave,Room SL-BO5, Boston, MA 02215 USA**USA
Author E-mail Address: mgb@mit.edu; jfrangio@bidmc.harvard.edu
Journal: Nature Biotechnology   25 ( 10 ): p 1165-1170 OCT 2007 2007
Item Identifier: doi:10.1038/nbt1340
ISSN: 1087-0156
Document Type: Article; Editorial
Record Type: Abstract
Language: English
Renal clearance of quantum dots

Abstract: ...treatment of human disease. However, the size and charge of most
nanoparticles preclude their efficient clearance from the body as intact
nanoparticles. Without such clearance or their biodegradation into biologically
benign components, toxicity is potentially amplified and radiological imaging is...
...dots in rodents as a model system, we have precisely defined the requirements for
renal filtration and urinary excretion of inorganic, metal-containing nanoparticles.
Zwitterionic or neutral organic coatings prevented adsorption...
```

DESCRIPTORS:
Organisms: Parts Etc: ...blood and lymphatics
Chemicals & Biochemicals: ...myoglobin;
Miscellaneous Terms: Concept Codes: renal clearance;

9/3,K/2 (Item 2 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

0019655483 Biosis No.: 200700315224
The effect of combining intermittent hemodiafiltration with forced alkaline diuresis on plasma myoglobin in rhabdomyolysis

Author: Peltonen S; Ahlstrom A (Reprint); Kylavainio V; Honkanen E; Pettila V
Author Address: Jorvi Hosp, HUS, Turuntie 150, Espoo 02740, Finland**Finland
Author E-mail Address: annika.ahlstrom@helsinki.fi
Journal: Acta Anaesthesiologica Scandinavica 51 (5): p 553-558 MAY 2007 2007
Item Identifier: doi:10.1111/j.1399-6576.2007.0128.x
ISSN: 0001-5172
Document Type: Article
Record Type: Abstract
Language: English
The effect of combining intermittent hemodiafiltration with forced alkaline diuresis on plasma myoglobin in rhabdomyolysis

Abstract: ...to examine the effect of combining intermittent hemodiafiltration (HDF) with forced alkaline diuresis on plasma myoglobin in rhabdomyolysis.Methods: This was a prospective, randomized, controlled, crossover study. Sixteen rhabdomyolysis patients with plasma myoglobin concentrations above 10,000 mu g/l were randomized. Forced alkaline diuresis was started immediately... ...repeated measures analysis of variance and Mann-Whitney U-test.Results: The percentage elimination of myoglobin from the circulation during HDF differed significantly from that during alkaline diuresis (28.1% vs. 14.2%, respectively; P < 0.01). The mean decrease in plasma myoglobin concentration during HDF [9731 mu g/l; 95% confidence interval (CI), 3672-5345 mu g... ...l) did not show a statistically significant difference (P=NS). The mean total amount of myoglobin found in the ultrafiltrate was 58.4 mg.Conclusion: The percentage myoglobin decrease during combined HDF and forced alkaline diuresis was higher than that during forced alkaline diuresis alone. Renal replacement therapy with filtration techniques may be considered for the clearance of myoglobin from plasma when urine alkalinization is not successful.
DESCRIPTORS:
Organisms: Parts Etc: ...blood and lymphatics
Chemicals & Biochemicals: myoglobin

9/3,K/3 (Item 3 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

19188521 Biosis No.: 200600533916
Mechanisms of bee venom-induced acute renal failure

Author: Grisotto Luciana S D; Mendes Gloria E; Castro Isac; Baptista Maria A S F; Alves Venancio A; Yu Luis; Burdmann Emmanuel A (Reprint)
Author Address: Sao Jose Rio Preto Med Sch, Div Nephrol, Av Brigadeiro Faria Lima,5416, BR-15090000 Sao Jose Do Rio Preto, SP, Brazil**Brazil
Author E-mail Address: burdmann@famerp.br
Journal: Toxicon 48 (1): p 44-54 JUL 2006 2006
ISSN: 0041-0101
Document Type: Article
Record Type: Abstract
Language: English

Abstract: ...injection. Control rats received saline. Bee venom caused an early and significant reduction in glomerular filtration rate (GFR, inulin clearance, .84 +/- 0.05 to 0.40 +/- 0.08 ml/min/100 g, p < 0.0001) and renal blood flow (RBF, laser Doppler flowmetry), which was more severe in the cortical (-72%) than in the medullary area (-48%), without systemic blood pressure decrease. Creatine phosphokinase, lactic dehydrogenase (LDH) and serum glutamic oxaloacetic transaminase increased significantly, pointing... ...remained significantly impaired. Renal histology showed acute tubular injury and a massive tubular deposition of myoglobin. Venom was added to isolated rat proximal tubules (PT) suspension subjected to normoxia and hypoxia...
DESCRIPTORS:
Organisms: Parts Etc: ...blood and lymphatics
Miscellaneous Terms: Concept Codes: renal blood flow

9/3,K/4 (Item 4 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

17020377 Biosis No.: 200200613888
Fenofibrate increases creatininemia by increasing metabolic production of creatinine

Author: Hottelart Carine; El Esper Najeh; Rose Francoise; Achard Jean-Michel; Fournier Albert (Reprint)
Author Address: Department of Nephrology, Hopital Sud, F-80054, Amiens Cedex 1, France** France
Journal: Nephron 92 (3): p 536-541 September, 2002 2002
Medium: print
ISSN: 0028-2766
Document Type: Article
Record Type: Abstract
Language: English

Abstract: ...weeks of fenofibrate therapy increased creatininemia without any changes in renal plasma flow and glomerular filtration rate (1). In 13 additional patients, muscular enzymes (AST, GPT, CPK, LDH) and myoglobin were measured before and after 2 weeks on fenofibrate, and the values of creatininemia obtained by the Jaffe technique and HPLC were compared. CPK and AST activity and plasma myoglobin increased in 2 patients with fenofibrate, but muscular enzymes remained unchanged in the population as... ...l ($p<0.0001$), but confirmed that creatininuria also increased to the extent that creatinine clearance remained unchanged (68+-6 vs. 67+-6 ml/min, n.s.). It is concluded that...
DESCRIPTORS:
Organisms: Parts Etc: ...blood and lymphatics
Chemicals & Biochemicals: ...clearance, production... ...myoglobin;
Miscellaneous Terms: Concept Codes: glomerular filtration rate...

9/3,K/5 (Item 5 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

15390178 Biosis No.: 200000108491
Push/pull hemodiafiltration: Technical aspects and clinical effectiveness

Author: Miwa Masamiki (Reprint); Shinzato Toru
Author Address: Department of Internal Medicine, Daiko Medical Center, Nagoya University, 1-1-20, Daiko-Minami, Higashi-ku, Nagoya, 461, Japan**Japan
Journal: Artificial Organs 23 (12): p 1123-1126 Dec., 1999 1999
Medium: print
ISSN: 0160-564X

Document Type: Article; Literature Review
Record Type: Abstract
Language: English

Abstract: Push/pull hemodiafiltration (HDF) is characterized by alternate repetition of filtration and backfiltration during hemodialysis with high-flux membrane. In the pressure-controlled push/pull (PC... ...push/pull HDF system, there are about 25 repetitions of dilution and concentration of the blood while it passes through the hemodiafilter. Hence, the PC P/P is functionally close to... ...treatment. In selecting a hemodiafilter for PC P/P, one must be certain that the blood flow channels in the hemodiafilter do not collapse by the positive pressure on the dialysate side in the back-filtration phase. Thus, the polyacrylonitrile hollow-fiber hemodiafilter and polysulfon hollow-fiber hemodiafilter are suitable for... ...the conventional HDF approach when a protein-permeable membrane is used. In terms of the removal rate of prolactin, no significant difference was found between PC P/P and conventional HDF. On the other hand, the removal rates of myoglobin and beta2M, where molecular size was smaller than prolactin, was significantly greater with the PC...
DESCRIPTORS:
Organisms: Parts Etc: blood--... ...blood and lymphatics
Chemicals & Biochemicals: ...myoglobin;
Miscellaneous Terms: Concept Codes: ...blood flow... ...filtration;

9/3,K/6 (Item 6 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

15086047 Biosis No.: 199900345707
Apheresis of plasma compounds as a therapeutic principle in severe sepsis and multiorgan dysfunction syndrome

Author: Stegmayr Bernd (Reprint)
Author Address: Division of Nephrology, Department of Internal Medicine, University Hospital Umea, S-90185, Umea, Sweden**Sweden
Journal: Clinical Chemistry and Laboratory Medicine 37 (3): p 327-332 March, 1999 1999
Medium: print
ISSN: 1434-6621
Document Type: Article; Literature Review
Record Type: Abstract
Language: English

Abstract: ...plasma content of several compounds, e.g., bacterial toxins, cytokines, cell debris, free hemoglobin and myoglobin. In blood, these compounds activate various cascade systems, which in large amounts or in more vulnerable patients... ...so far been of limited benefit. These effects have mainly been focused on lowering the blood concentration of single substances such as tumor necrosis factor. By the use of low-and high-flux hemodialysis filters, usually only small amounts of these substances are removed. By the use of plasmapheresis or plasma exchange, the extent of removal is considerably increased. The efficacy varies between the techniques (centrifugation vs. filtration or adsorption) and has also different influences on e.g. the complement system. This report describes these techniques and the therapeutical possibilities given by them. In small trials, blood or plasma exchange has been used as rescue therapy in critically ill patients with a...
DESCRIPTORS:
Organisms: Parts Etc: blood--... ...blood and lymphatics
Chemicals & Biochemicals: ...myoglobin

9/3,K/7 (Item 7 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

13879593 Biosis No.: 199799513653
Evaluation of solute removal in Push/Pull HDF using an output response method

Author: Mineshima M; Kaneko I; Sanaka T; Agishi T; Ota K
Author Address: Kidney Cent., Tokyo Women's Med. Coll., 8-1 Kawada-cho, Shinjuku-ku, Tokyo 162, Japan**Japan
Journal: Japanese Journal of Artificial Organs 26 (1): p 135-139 1997 1997
ISSN: 0300-0818
Document Type: Article
Record Type: Abstract
Language: Japanese
Evaluation of solute removal in Push/Pull HDF using an output response method

Abstract: Solute removal characteristics in Push/Pull HDF were examined during an experimental study and an analytical study... ...the results in (a) and (b), Push/Pull HDF has a lower efficiency of urea removal than that in HD and a higher myoglobin removal . Out-put response in solute concentration at blood side clarifies an effect of unsteady-state in Push/Pull HDF. Value for time-averaged myoglobin clearance increased with higher filtration flow rates in both Pull and Push phases, and dialysate reservoir volume. Optimum operating condition...
DESCRIPTORS:
Major Concepts: Blood and Lymphatics...
Miscellaneous Terms: Concept Codes: ...SOLUTE REMOVAL EVALUATION

9/3,K/8 (Item 8 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

13774283 Biosis No.: 199799408343
Measurement of myeloperoxidase in leukocyte-containing tissues

Author: Xia Yong; Zweier Jay L
Author Address: Mol. Cell. Biophys. Lab., Dep. Med., Div. Cardiology, Electron Paramagnetic Resonance Cent., Johns Hopkins Med. Inst., Johns Hopkins Bayview Med. Cent., Baltimore, MD 21224, USA**USA
Journal: Analytical Biochemistry 245 (1): p 93-96 1997 1997
ISSN: 0003-2697
Document Type: Article
Record Type: Abstract
Language: English

Abstract: ...these methods often fail to accurately assay MPO activity in tissues. We observe that tissue myoglobin or vascular hemoglobin markedly effects the spectrophotometric assay for MPO. Under optimal conditions of 0.53 mM O-dianisidine, 0.15 mM H-2O-2, pH 6.0, either myoglobin or hemoglobin produced absorbance at 460 nm in a concentration-dependent manner similar to that of MPO. In perfused heart tissue, myoglobin caused a major problem with the assay resulting in an inability to obtain accurate linear... ...as a function of MPO concentration and PMN number. To eliminate the effect of tissue myoglobin or vascular hemoglobin on the assay, one-step gel filtration chromatography of tissue extracts was introduced. MPO, myoglobin, and hemoglobin were easily separated using a Sephadex G-75 column according to the difference... ...be precisely quantitated after one-step purification on a molecular exclusion column. Enzyme purification with removal of myoglobin is essential for obtaining accurate measurement of MPO activity and quantitation of PMNs in muscle...
DESCRIPTORS:
Major Concepts: ...Blood and Lymphatics

9/3,K/9 (Item 9 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options

Biosis Previews(R)

12652869 Biosis No.: 199598120702
Partial purification and further characterization of the novel endoglucosaminidase from human serum that hydrolyses
4-methylumbelliferyl-N-acetyl-beta-D-chitotetraoside (MU-TACT hydrolase)

Author: Overdijk B (Reprint); Van Steijn G J; Den Tandt W R
Author Address: Dep. Med. Chem., Vrije Univ., Van der Boechorststraat 7, 1081 BT Amsterdam, Netherlands**Netherlands
Journal: International Journal of Biochemistry 26 (12): p 1369-1375 1994 1994
ISSN: 0020-711X
Document Type: Article
Record Type: Abstract
Language: English

Abstract: ...by means of ammonium sulphate precipitation, anion-exchange chromatography, Con A-Sepharose chromatography and gel filtration on Sepharose CL-6B followed by Superose 12 HR. Based on the latter technique the native apparent molecular weight of the enzyme appeared to be equal to that of myoglobin, being approx. 17 kD. The enzyme eluted clearly at a different volume than lysozyme. MU-TACT is a commercially available substrate for lysozyme...
DESCRIPTORS:
Major Concepts: ...Blood and Lymphatics

9/3,K/10 (Item 10 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

10837093 Biosis No.: 199192082864
USE OF THE ULTRAFILTRATE OBTAINED IN TWO-CHAMBER PED HEMODIAFILTRATION AS REPLACEMENT FLUID EXPERIMENTAL EX-VIVO AND IN-VITRO STUDY

Author: GHEZZI P M (Reprint); BOTELLA J; SARTORIS A M; GERVASIO R; DIEZ C
Author Address: DIV NEFROLOGIA, OSPEDALE S CROCE, 12100 CUNEO, ITALY**ITALY
Journal: International Journal of Artificial Organs 14 (6): p 327-334 1991
ISSN: 0391-3988
Document Type: Article
Record Type: Abstract
Language: ENGLISH

Abstract: PFD (Paired Filtration Dialysis) is the only hemodiafiltration (HDF) technique in which the ultrafiltrate (UF) is continuously available... ...dialyzing section of the PFD system) and the medium-to-large molecules (vit B12 and myoglobin in vitro and beta-2-microglobulin (B2m) and (hANP) in vivo), but not the electrolytes... ...of the dialysate, and considering that the K+ and phosphates, and urea, can all be removed by diffusion in the dialyzing section, PFD can be done using in its "regenerated" ultrafiltrate...
Descriptors: HUMAN SODIUM CALCIUM UREA MYOGLOBIN BETA MICROGLOBULIN BICARBONATE POTASSIUM PHOSPHATE URIC ACID CREATININE
DESCRIPTORS:
Major Concepts: Blood and Lymphatics...

9/3,K/11 (Item 11 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

10297577 Biosis No.: 199090082056
RENAL ELIMINATION OF BETA-2 MICROGLOBULIN AND MYOGLOBIN IN PATIENTS WITH NORMAL AND IMPAIRED RENAL FUNCTION

Author: FLOEGE J (Reprint); WILKS M F; SOOSE M; KOTZERKE J; SHALDON S; KOCH K M
Author Address: ABTEILUNG NEPHROLOGIE, MEDIZINISCHE HOCHSCHULE HANNOVER, D-3000 HANNOVER 61, WEST GERMANY**WEST GERMANY
Journal: Nephron 55 (4): p 361-367 1990
ISSN: 0028-2766
Document Type: Article
Record Type: Abstract
Language: ENGLISH
RENAL ELIMINATION OF BETA-2 MICROGLOBULIN AND MYOGLOBIN IN PATIENTS WITH NORMAL AND IMPAIRED RENAL FUNCTION

Abstract: ...extraction of .beta.2M, polyfructosan (an inulin analogue), and a second low-molecular-weight protein, myoglobin, was measured in vivo in 16 human kidneys with normal renal function/gross morphology and... ...0.198 .+-. 0.037 vs. 0.182 .+-. 0.05; p = 0.04), while that of myoglobin (0.177 .+-. 0.068) was not different from that of polyfructosan. In kidneys with reduced function, the extraction of polyfructosan or myoglobin was not significantly altered. In contrast, the .beta.2M extraction decreased to 0.110 .+-. 0.060 (p < 0.01 vs. extraction of polyfructosan or myoglobin). This decrease was significantly correlated with the decrease of the endogenous creatinine clearance or the total or unilateral 131I-hippuran clearance. These results indicate that in normal renal function the glomerular filtration of .beta.2M may be supplemented by a peritubular mode of removal. The mechanism(s) underlying the selective decrease of .beta.2M extraction in kidneys with reduced...
Descriptors: KIDNEY GLOMERULAR FILTRATION
DESCRIPTORS:
Major Concepts: Blood and Lymphatics...

09270883 Biosis No.: 198886110804
HEMOGLOBIN AND MYOGLOBIN-INDUCED ACUTE RENAL FAILURE IN RATS ROLE OF IRON IN NEPHROTOXICITY

Author: PALLER M S (Reprint)
Author Address: UNIV MINNESTOA, BOX 736 UMHC, MINNEAPOLIS, MINN 55466, USA**USA
Journal: American Journal of Physiology 255 (3 PART 2): p F539-F544 1988
ISSN: 0002-9513
Document Type: Article
Record Type: Abstract
Language: ENGLISH
HEMOGLOBIN AND MYOGLOBIN-INDUCED ACUTE RENAL FAILURE IN RATS ROLE OF IRON IN NEPHROTOXICITY

Abstract: ...concurrent ischemia in the rat. Intramuscular injection of 50% glycerol (5 ml/kg) caused inulin clearance to fall to 0.13 .+-. 0.03 (SE) ml/min (normal value, 1.0-1... ...time of glycerol injection significantly attenuated this renal dysfunction. Deferoxamine-treated animals had an inulin clearance of 0.37 .+-. 0.06 ml/min (P < 0.01). Glycerol injection was also associated ... ...another model of heme pigment-induced renal injury, hemoglobin was infused to produce hemoglobinuria. Inulin clearance 1 h after hemoglobin infusion was significantly reduced to 0.84 .+-. 0.5 ml/min (P < 0.025). Infusion of deferoxamine after hemoglobin prevented the hemoglobin-induced decrease in inulin clearance. Thirty minutes of renal ischemia followed by infusion of hemoglobin resulted in more severe renal dysfunction with inulin clearance of 0.54 .+-. 0.08 ml/min. Deferoxamine infused at the time of reperfusion attenuated the fall in glomerular filtration rate after ischemia and hemoglobin infusion: inulin clearance 1.04 .+-. 0.06 (P < 0.005). These studies suggest that after glycerol injection or hemoglobin infusion iron is released from hemoglobin (and myoglobin) and promotes free radical formation, lipid peroxidation, and renal dysfunction. Deferoxamine prevents renal injury by...

DESCRIPTORS:
Major Concepts: Blood and Lymphatics...

9/3,K/13 (Item 13 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

06657095 Biosis No.: 198274073518
ISOLATION AND AMINO-ACID SEQUENCE OF A MONOMERIC HEMO GLOBIN IN HEART MUSCLE OF THE BULL FROG RANA-CATESBEIANA

Author: MAEDA N (Reprint); FITCH W M
Author Address: DEP OF PHYSIOLOGICAL CHEMISTRY, UNIV OF WIS, MADISON, WIS 53706, USA**USA
Journal: Journal of Biological Chemistry 257 (6): p 2806-2815 1982
ISSN: 0021-9258
Document Type: Article
Record Type: Abstract
Language: ENGLISH

Abstract: ...heme-containing protein was isolated from heart muscles of the bullfrog, R. catesbeiana, by gel filtration on Sephadex G-75 followed by DE52 ion-exchange column chromatography. The protein is composed of 132 amino acid residues and has MW = 14,000 as estimated by gel filtration on Sephadex G-50. This is the shortest heme globin so far known. The complete ... ...R. catesbeiana than to any other globin. A phylogenetic study of it and other globins clearly reveals that it arose via a gene duplication of Hb near the time of the... ...1, .alpha.1.beta.2 subunit contact regions are significantly substituted, frequently reverting to a myoglobin-like residue. The absence of this monomeric protein from the blood and the absence of myoglobin in heart muscle may indicate the protein functions as a myoglobin.
DESCRIPTORS:
Major Concepts: ...Blood and Lymphatics

9/3,K/14 (Item 14 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

06565681 Biosis No.: 198273069608
PATHO PHYSIOLOGY OF ACUTE BENCE-JONES PROTEIN NEPHRO TOXICITY IN THE RAT

Author: WEISS J H (Reprint); WILLIAMS R H; GALLA J H; GOTTSCHALL J L; REES E D; BHATHENA D; LUKE R G
Author Address: NEPHROL RESEARCH TRAINING CENT, UNIV ALABAMA BIRMINGHAM, BIRMINGHAM, ALABAMA 35294, USA**USA
Journal: Kidney International 20 (2): p 198-210 1981
ISSN: 0085-2538
Document Type: Article
Record Type: Abstract
Language: ENGLISH

Abstract: ...in general, various proteins were infused into male Sprague-Dawley rats and renal function by clearance and micropuncture techniques before and after infusion. Renal histology was graded on the basis of... ...renal failure. Despite volume expansion. BJP infusion was associated with a decrease in GFR [glomerular filtration rate] to 60% of control, Bence Jones proteinuria and tubular cast formation. Infusion of .beta... ...of control) and tubular cast formation. Infusion of 0.15 M sodium chloride, albumin (BSA), myoglobin (a filterable protein with higher isoelectric point than BJP) or non-BJP-protein isolated from... ...Tubular obstruction is probably an important, but not necessarily the only, mechanism for this impaired filtration. Tubular obstruction most likely occurs on the basis of

intratubular BJP-containing casts. The precise...
DESCRIPTORS:
Major Concepts: ...Blood and Lymphatics

9/3,K/15 (Item 15 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

05632559 Biosis No.: 197967021554
NITRITE REDUCTASE-LIKE ACTIVITY OF HEAT DENATURED CYTOCHROME C

Author: MURAKAMI Y (Reprint); HO C H; OUCHI T; NISIZAWA K
Author Address: INST BIOL RES, SANGYO-NORITSU UNIV, TODOROKI, SETAGAYA, TOKYO 158, JPN** JAPAN
Journal: Scientific Reports of the Faculty of Agriculture Ibaraki University (25): p 45-52 1977
ISSN: 0445-1694
Document Type: Article
Record Type: Abstract
Language: ENGLISH

Abstract: ...cytochrome c at 100.degree. C for appropriate periods under varied conditions. All of them clearly showed nitrite reductase (NiR)-like activity .**GRAPHIC**. + 6e- + 8H+ .fwdarw. .**GRAPHIC**. + 2H2O). Variations in the... ...the denatured products were microscopically observed. The denatured particles were fractionated through cellulose nitrate disc filter (Millipore) of various pore-size and NiR activity of each fraction was determined. The fraction... ...peroxidase and Hb showed significant NiR activity without heating, but this activity decreased on heating. Myoglobin became active after the thermal denaturation. However, all of these NiR activities were low compared...
DESCRIPTORS:
Major Concepts: Blood and Lymphatics...

9/3,K/16 (Item 16 from file: 5) Links
Fulltext available through: STIC Full Text Retrieval Options
Biosis Previews(R)

05618005 Biosis No.: 197967007000
ENHANCED SUSCEPTIBILITY OF HEMO GLOBIN TO PROTEASES UPON ASCORBIC-ACID COUPLED OXIDATION OF THE HEME MOIETY

Author: MURAKAMI T (Reprint); MURACHI T
Author Address: DEP CLIN SCI, FAC MED, KYOTO UNIV, SAKYO, KYOTO 606, JPN**JAPAN
Journal: Journal of Biochemistry (Tokyo) 84 (1): p 83-92 1978
ISSN: 0021-924X
Document Type: Article
Record Type: Abstract
Language: ENGLISH

Abstract: ...of proteolytic susceptibility after ascorbic acid-coupled oxidation was observed in the case of monomeric myoglobin, while no change in susceptibility occurred in the case of cytochrome c, in which the... ...in its protein moiety, causing a marked enhancement of proteolytic susceptibility. Circular dichroism and gel filtration measurements demonstrated that these conformational changes in choleglobin and verdohemoglobin are not as drastic as those involving removal of heme or dissociation into dimers and monomers, or unfolding of the backbone structure, but...
DESCRIPTORS:
Major Concepts: ...Blood and Lymphatics

9/3,K/17 (Item 17 from file: 5) Links
Biosis Previews(R)

0000654826 Biosis No.: 19502400026144
The simultaneous spectropho-tometric determination of haemoglobin and myoglobin in extracts of human muscle

Book Title: Haemoglobin, edited by F. J. W. Roughton and J. C. Kendrew
Author: DeDUVE CHRISTIAN
p pp. 125-129 1950
Document Type: Book
Record Type: Abstract
Language: Unspecified
The simultaneous spectropho-tometric determination of haemoglobin and myoglobin in extracts of human muscle

Abstract: ...condition of accuracy and is ensured by preliminary checking by means of a colored glass filter. The extract used for the detn. must be crystal-clear, strongly buffered, and truly representative of the pigment content of the muscle. A method is...
DESCRIPTORS:
Major Concepts: Blood and Lymphatics...
Chemicals & Biochemicals: ...myoglobin

9/3,K/18 (Item 1 from file: 34) Links
Fulltext available through: STIC Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

09110492 Genuine Article#: 368VX No. References: 8
Effects of internal filtration on the solute removal efficiency of a dialyzer

Author: Mineshima M (REPRINT) ; Ishimori I; Ishida K; Hoshino T; Kaneko I; Sato Y; Agishi T; Tamamura N; Sakurai H; Masuda T; Hattori H
Corporate Source: TOKYO WOMENS MED UNIV,KIDNEY CTR, SHINJUKU KU, 8-1 KAWADA CHO/TOKYO 1628666//JAPAN/ (REPRINT); TOYOBO CO LTD,INST RES/OTSU/SHIGA/JAPAN/; NISSHO CORP,R&D LAB/KUSATSU//JAPAN/
Journal: ASAIO JOURNAL , 2000 , V 46 , N4 (JUL-AUG) , P 456-460
ISSN: 1058-2916 Publication date: 20000700
Publisher: LIPPINCOTT WILLIAMS & WILKINS , 530 WALNUT ST, PHILADELPHIA, PA 19106-3621
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)
Effects of internal filtration on the solute removal efficiency of a dialyzer
Abstract: To improve solute removal efficiency, several types of dialyzers with enhanced internal filtration were introduced for clinical application. In these dialyzers, enhanced internal filtration increased convective transport of the solute, in addition to diffusive transport. In this study, the effects of internal filtration on solute removal efficiency were examined by both analytic and experimental studies. Internal filtration is affected by blood (Q(B)) and dialysate (Q(D)) flow rates; the patient's hematocrit and plasma level... ...and momentum along the dialyzer. It clarified the effects of these parameters on maximum internal filtration flow rate (Q(IF)) and clearance (K) of urea (60 daltons), vitamin B-12 (1,355), and myoglobin (17,000). As a result of the analytic study, Q(IF) was increased, resulting in... ...Nissho Corporation, Kusatsu, lapan, were used for the experimental study. An in vitro evaluation using myoglobin solution showed the same trends as found in the analytic study. For example, a dialyzer with 150 mum of D has a 72.0 ml/min myoglobin K value, much higher than that of 53.7 ml/min for a dialyzer with... ...B) (300 ml/min) and DR (50%) values. Development of a dialyzer with enhanced internal filtration, however, should take the patient's safety into account, and hemolysis and endotoxin invasion from...

9/3,K/19 (Item 2 from file: 34) Links

Fulltext available through: STIC Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

06770287 Genuine Article#: ZQ638 No. References: 6
Solute removal characteristics in push/pull hemodiafiltration

Author: Mineshima M (REPRINT) ; Agishi T; Sasaki J; Sunohara T; Sakai K
Corporate Source: TOKYO WOMENS MED COLL,KIDNEY CTR/TOKYO 1628666//JAPAN/ (REPRINT); WASEDA UNIV,DEPT CHEM ENGN/TOKYO 1698555//JAPAN/
Journal: KAGAKU KOGAKU RONBUNSHU , 1998 , V 24 , N2 (MAR) , P 195-199
ISSN: 0386-216X Publication date: 19980300
Publisher: SOC CHEMICAL ENG JAPAN , KYORITSU BUILDING 4-16-19 KOHINATA, BUNKYO KU TOKYO 112, JAPAN
Language: Japanese Document Type: ARTICLE (ABSTRACT AVAILABLE)
Solute removal characteristics in push/pull hemodiafiltration
Abstract: Solute removal characteristics in push and pull hemodiafiltration (push/pull HDF) are examined during an experimental study... ...in (a) and (b),push/pull HDF has a lower efficiency of urea and creatinine removal than that in HD and a higher myoglobin removal. Output response in solute concentration on the blood side clarified the effect of switching of filtration direction in push/pull HDF. Value for time averaged myoglobin clearance increases with filtration flow rate in both pull and push phases and dialysate reservoir volume. Optimum operating conditions...

9/3,K/20 (Item 3 from file: 34) Links
Fulltext available through: STIC Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

04706585 Genuine Article#: UC176 No. References: 48
REMOVAL OF ARG(141) FROM THE ALPHA-CHAIN OF HUMAN HEMOGLOBIN BY CARBOXYPEPTIDASE-N AND CYCLOPEPSIDASE-M

Author: MICHEL B; IGIC R; LERAY V; DEDDISH PA; ERDOS EG
Corporate Source: UNIV ILLINOIS,COLL MED,DEPT PHARMACOL,M-C 868,835 S WOLCOTT AVE/CHICAGO//IL/60612; UNIV ILLINOIS,COLL MED,DEPT PHARMACOL/CHICAGO//IL/60612; UNIV ILLINOIS,COLL MED,DEPT ANESTHESIOL/CHICAGO//IL/60612; COOK CTY HOSP DEPT ANESTHESIOL/CHICAGO//IL/00000
Journal: CIRCULATION RESEARCH , 1996 , V 78 , N4 (APR) , P 635-642
ISSN: 0009-7330
Language: ENGLISH Document Type: ARTICLE (Abstract Available)
REMOVAL OF ARG(141) FROM THE ALPHA-CHAIN OF HUMAN HEMOGLOBIN BY CARBOXYPEPTIDASE-N AND CYCLOPEPSIDASE
Abstract: ...arginase contamination present in the hemoglobin preparation, which converted the released arginine to ornithine, was removed by gel filtration. CPM was about 20 times more efficient than CPN or its active subunit in hydrolyzing...
Identifiers-- ...MEMBRANE-BOUND CARBOXYPEPTIDASE; FUNCTIONAL-PROPERTIES; CEREBRAL VASOSPASM; NITRIC-OXIDE; HUMAN-PLASMA; OXYHEMOGLOBIN; BLOOD; CELLS; SUBUNITS; ARTERIES
Research Fronts: 94-0159 001 (LIGAND-BINDING IN MYOGLOBIN; PROTEIN DYNAMICS; LOW-TEMPERATURE OPTICAL SPECTROSCOPY; ALLOSTERIC EQUILIBRIUM MEASUREMENTS; RANDOM MUTAGENESIS)
94-0862 001 (PULMONARY... ...SKELETAL-MUSCLE; DEVELOPMENTAL REGULATION; YEAST SACCHAROMYCES-CEREVISIAE)
94-3943 001 (DIASPIRIN CROSS-LINKED HEMOGLOBIN; ANIMAL BLOOD; NEWLY RECOGNIZED LIPOPOLYSACCHARIDE (LPS)-BINDING PROTEIN)
94-4209 001 (HYDROGEN-PEROXIDE WITHIN HUMAN ERYTHROCYTES; PRIMAQUINE...

9/3,K/21 (Item 4 from file: 34) Links
SciSearch(R) Cited Ref Sci

01567577 Genuine Article#: HJ944 No. References: 22

A HUMAN RECOMBINANT HEMOGLOBIN DESIGNED FOR USE AS A BLOOD SUBSTITUTE

Author: LOOKER D; ABBOTTBROWN D; COZART P; DURFEE S; HOFFMAN S; MATHEWS AJ; MILLERROEHRICH J; SHOEMAKER S; TRIMBLE S; FERMI G; KOMIYAMA NH; NAGAI K; STETLER GL
Corporate Source: SOMATOGEN INC,5797 CENT AVE/BOULDER//CO/80301; SOMATOGEN INC,5797 CENT AVE/BOULDER//CO/80301; MRC,MOLEC BIOL LAB/CAMBRIDGE CB2 2QH//ENGLAND/
Journal: NATURE , 1992 , V 356 , N6366 (MAR 19) , P 258-260
Language: ENGLISH Document Type: ARTICLE (Abstract Available)
A HUMAN RECOMBINANT HEMOGLOBIN DESIGNED FOR USE AS A BLOOD SUBSTITUTE
Abstract: THE need to develop a blood substitute is now urgent because of the increasing concern over blood-transmitted viral and bacterial pathogens 1. Cell-free haemoglobin solutions 2,3 and human haemoglobin... ...4 and Saccharomyces cerevisiae 5 have been investigated as potential oxygen-carrying substitutes for red blood cells. But these haemoglobins cannot be used as a blood substitute because (1) the oxygen affinity in the absence of 2,3-bisphosphoglycerate is too... ...in the tissues 6, and (2) they dissociate into alpha-beta dimer 7 that are cleared rapidly by renal filtration 8-10, which can result in long-term kidney damage 7-9. We have produced...
Research Fronts: 90-1679 002 (HEME POCKET IN MYOGLOBIN; PROTEIN GROUPS; INTERACTION OF METAL-IONS; CONFORMATIONAL NORMAL MODE ANALYSIS; X-RAY CRYSTAL-STRUCTURE; DISTAL...

9/3,K/22 (Item 1 from file: 45) Links
Fulltext available through: STIC Full Text Retrieval Options
EMCare

01150767 EMCare No: 35191569
Elimination kinetics of myoglobin and creatine kinase in rhabdomyolysis: Implications for follow-up

Lappalainen H.; Tiula E.; Uotila L.; Manttari M.
Dr. H. Lappalainen, Department of Medicine, Helsinki University Central Hospital, Helsinki Finland
Critical Care Medicine (CRIT. CARE MED.) (United States) 01 OCT 2002 , 30/10 (2212-2215)
CODEN: CCMDC ISSN: 0090-3493
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 16
RECORD TYPE: Abstract

Elimination kinetics of myoglobin and creatine kinase in rhabdomyolysis: Implications for follow-up

Objective: Creatine kinase and myoglobin are markers of muscular damage in rhabdomyolysis. Whereas myoglobin is considered to be the principal compound causing tubular damage, serum creatine kinase level is ... ...elimination kinetics of these two compounds may influence therapeutic decisions, we studied elimination kinetics of myoglobin and creatine kinase in patients with rhabdomyolysis. Design: Open, noncomparative study. Setting: Intensive and intermediary... ...Ten of 13 patients were treated with forced alkaline diuresis, and none were dialyzed. Results: Myoglobin had faster elimination kinetics than creatine kinase ($p < .01$), and the average times to reach the 50% level of initial values were 12 hrs for myoglobin and 42 hrs for creatine kinase. Elimination of myoglobin was not affected by glomerular filtration rate. Compared with creatinine clearance (mean, 102 mL/min), myoglobin clearance was low (mean, 3 mL/min), both in patients with preserved renal function ($n = 11$) and in those with acute renal failure ($n = 2$). Conclusion: Serum myoglobin has faster elimination kinetics than creatine kinase in patients treated with forced alkaline diuresis for rhabdomyolysis. Considering the etiologic role of myoglobin, our data suggest that serum myoglobin level, rather than that of creatine kinase, should be used to guide therapy in patients...

DESCRIPTORS:
* myoglobin; *creatine kinase; *rhabdomyolysis; *kinetics; *kidney failure; *follow up
marker; hospital patient; patient; diuresis; acute kidney failure; creatine kinase blood level; kidney function; serum; glomerulus filtration rate; female; human; kidney clearance; kidney tubule damage; male; priority journal; clinical article; aged; clinical practice; university hospital; creatinine clearance; therapy; adolescent; adult

9/3,K/23 (Item 2 from file: 45) Links
Fulltext available through: STIC Full Text Retrieval Options
EMCare

00464315 EMCare No: 28270843
Myoglobin clearance during continuous veno-venous hemofiltration with or without dialysis

Nicolau D.; Feng Y.S.; Wu A.H.B.; Bernstein S.P.; Nightingale C.H.
Dr. D. Nicolau, Division of Infectious Diseases, Hartford Hospital, 80 Seymour Street, Harford, CT 06102 United States
International Journal of Artificial Organs (INT. J. ARTIF. ORGANS) (Italy) 1998 , 21/4 (205-209)
CODEN: IJAOD ISSN: 0391-3988
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 14
RECORD TYPE: Abstract

Myoglobin clearance during continuous veno-venous hemofiltration with or without dialysis

...available. Previously, we have demonstrated that continuous arteriovenous hemofiltration (CAVH) is an effective technique for removing myoglobin in an animal model. In the present study, swine were administered four grams of equine myoglobin intravenously and underwent the continuous venovenous hemofiltration (CVVH) procedure for six hours each. Animals were... ...there was a rapid and sustained production of ultrafiltrate in all groups. The amount of myoglobin excreted in the ultrafiltrate over the six-hour filtering period was 688, 948 and 570... ...the administered dose, respectively, for the three treatments. In comparison to previous CAVH experiments, CVVH removed more circulating myoglobin and the addition of the dialysis component did not appear to improve removal. Based on these findings, it appears that the CVVH hemofiltration system is a viable option for the removal of systemic myoglobin.
DEVICE BRAND NAME/MANUFACTURER NAME: Blood Monitor Pump bm1 1/baxter/United States
DESCRIPTORS:
* myoglobin; *continuous hemofiltration; *rhabdomyolysis; *dialysis; * hemofiltration; *acute kidney failure
pump; filtration; swine; animal model; female; blood pump; myoglobinuria; nonhuman; blood filter; kidney failure; controlled study; animal experiment; flow rate; dialysate

9/3,K/24 (Item 1 from file: 73) Links
Fulltext available through: STIC Full Text Retrieval Options
EMBASE

0079462224 EMBASE No: 2003167373
Cardiovascular and renal phenotyping of genetically modified mice: A challenge for traditional physiology

Fitzgerald S.M.; Gan L.; Wickman A.; Bergstrom G. // Bergstrom G. // Fitzgerald

S.M.
Department of Physiology, Inst. of Physiology and Pharmacology, Goteborg University, Goteborg, Sweden // Department of Physiology, Inst. of Physiology and Pharmacology, Goteborg University, PO Box 432, S-405 30 Goteborg, Sweden // Department of Physiology, Monash University, Clayton, Vic. 3800, Australia
Author email: goran.bergstrom@fysiologi.gu.se; goran.bergstrom@fysiologi.gu.se
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Corresp. Author email: goran.bergstrom@fysiologi.gu.se

Clinical and Experimental Pharmacology and Physiology (Clin. Exp. Pharmacol. Physiol.) (Australia) April 1, 2003 , 30/4 (207-216)
CODEN: CEXPB ISSN: 03051870
Item Identifier (DOI): 10.1046/j.1440-1681.2003.03818.x
Document Type: Journal ; Short Survey Record Type: Abstract
Language: English Summary language: English
Number of References: 73
Drug Descriptors:
...density lipoprotein receptor--endogenous compound--ec; medetomidine --drug dose--do; medetomidine--intraperitoneal drug administration--ip; myoglobin--endogenous compound--ec; myosin binding protein C --endogenous compound--ec; nitric oxide synthase--endogenous compound...
Medical Descriptors:
anesthesia; blood pressure; blood vessel reactivity; cardiovascular response; creatinine clearance; diet; DNA modification; echocardiography; electrocardiography; emotional stress; exercise; gene mutation; genetic engineering; genotype; glomerulus filtration rate; heart function; heart rate variability; kidney function; metabolic rate; molecular biology; nonhuman; phenotype; plethysmography...

9/3,K/25 (Item 2 from file: 73) Links
Fulltext available through: STIC Full Text Retrieval Options
EMBASE

0076802193 EMBASE No: 1997095164
Evaluation of solute removal in push/pull HDF using an out-put response method

Mineshima M.; Kaneko I.; Sanaka T.; Agishi T.; Ota K.
Kidney Center, Tokyo Women's Medical College, 8-1, Kawada-cho, Shinjuku-ku, Tokyo 162, Japan
Corresp. Author: Mineshima M.
Corresp. Author Affil: Kidney Center, Tokyo Women's Medical College, 8-1, Kawada-cho, Shinjuku-ku, Tokyo 162, Japan

Japanese Journal of Artificial Organs (JPN. J. ARTIF. ORGANS) (Japan) April 10, 1997 , 26/1 (135-139)
CODEN: JNZKA ISSN: 03000818
Document Type: Journal ; Article Record Type: Abstract
Language: Japanese Summary language: English; Japanese
Number of References: 4
Evaluation of solute removal in push/pull HDF using an out-put response method

Solute removal characteristics in Push/Pull HDF were examined during an experimental study and an analytical study... ...the results in (a) and (b), Push/pull HDF has a lower efficiency of urea removal than that in HD and a higher myoglobin removal . Out-put response in solute concentration at blood side clarifies an effect of unsteady-state in Push/pull HDF. Value for time-averaged myoglobin clearance increased with higher filtration flow rates in both Pull and Push phases, and dialysate reservoir volume. Optimum operating condition...
Drug Descriptors:
* myoglobin; *urea
Medical Descriptors:

article; dialysate; filtration

9/3,K/26 (Item 3 from file: 73) Links
Fulltext available through: STIC Full Text Retrieval Options
EMBASE

0076576655 EMBASE No: 1996252784
Alternate repetition of short fore- and backfiltrations reduces convective albumin loss

Shinzato T.; Miwa M.; Nakai S.; Takai I.; Matsumoto Y.; Morita H.; Miyata T.; Maeda K. // Shinzato T.
Department of Internal Medicine, Branch Hospital, Nagoya University School of Medicine, Nagoya, Japan // Department of Internal Medicine, Branch Hospital, Nagoya University School of Medicine, 1-1-20, Daiko-Minami, Higashi-ku, Nagoya, 461, Japan
Corresp. Author: Shinzato T.
Corresp. Author Affil: Department of Internal Medicine, Branch Hospital, Nagoya University School of Medicine, 1-1-20 Daiko-Minami, Higashi-ku, Nagoya 461, Japan

Kidney International (KIDNEY INT.) (United States) September 11, 1996 , 50/2 (432-435)
CODEN: KDYIA ISSN: 00852538
Document Type: Journal ; Article Record Type: Abstract
Language: English Summary language: English
Number of References: 9

An effective therapeutic means to remove relatively large polypeptide uremic toxins stems to be a hemofiltration (HF) or hemodiafiltration (HDF) employing... ...through a protein-permeable membrane, each less than 1 second in duration and at each filtration volume of 15 ml, where a pyrogen-free dialysate was supplied. The present results indicated... ...of that by conventional HDF. Nevertheless, the reduction rates of beta SUB 2- microglobulin and myoglobin were significantly greater by push/pull HDF than by conventional HDF.
Drug Descriptors:
beta 2 microglobulin; myoglobin
Medical Descriptors:
* blood filtration

9/3,K/27 (Item 4 from file: 73) Links
Fulltext available through: STIC Full Text Retrieval Options
EMBASE

0073402819 EMBASE No: 1987166853
Effect of albumin on the osmotic pressure exerted by myoglobin across capillary walls in frog mesentery

Curry F.E.; Michel C.C.; Phillips M.E.
University Laboratory of Physiology, Oxford OX1 3PT, United Kingdom
Corresp. Author Affil: University Laboratory of Physiology, Oxford OX1 3PT, United Kingdom

Journal of Physiology (J. PHYSIOL.) (United Kingdom) September 8, 1987 , Vol. 387/- (69-82)
CODEN: JPHYA ISSN: 00223751
Document Type: Journal Record Type: Abstract
Language: English
Effect of albumin on the osmotic pressure exerted by myoglobin across capillary walls in frog mesentery

...capillaries in mesenteries of pithed frogs were perfused sequentially with two frog Ringer solutions containing myoglobin at a concentration of 70 mg/ml. The first

perfusate solution contained bovine serum albumin... ...was used to measure the capillary hydraulic conductivity and the effective osmotic pressure of the myoglobin solution across the capillary wall under conditions where the transcapillary concentration difference was established by steady-state ultrafiltration. 2. In six capillaries the effective osmotic pressure of the myoglobin solution at 20-22(deg)C was 15.9+/-2.2 (S.E. of mean... ...was in the perfusate and 10.1+/-1.1 cmH SUB 2O after albumin was removed from the perfusate. 3. The hydraulic conductivity of the capillary wall increased from a mean... ...x 10 SUP -7 cm/(s cmH SUB 2O) during perfusion with Ringer solution containing myoglobin alone. 4. Control experiments to measure steady-state filtration rates at pressures 10-30 cmH SUB 2O were carried out to check the assumption in the method that the reduction in the measured osmotic pressure of myoglobin was the result of changes in the properties of the molecular sieve within the capillary... ...side of the capillary wall. 5. The measured reduction in the effective osmotic pressure of myoglobin when albumin was removed from the perfusate does not conform to the hypothesis that the tight segment of the intercellular junction is the principal molecular filter for myoglobin in the wall of frog mesenteric capillaries. 6. Our results do conform to the hypothesis that a network of fibrous molecules, reinforced by adsorbed albumin, forms the principal molecular filter at the capillary wall in frog mesenteric capillaries.
Drug Descriptors:
* albumin; *myoglobin
Medical Descriptors:
* blood vessel permeability; *capillary wall; *drug efficacy; * mesentery; *osmotic pressure

9/3,K/28 (Item 5 from file: 73) Links
Fulltext available through: STIC Full Text Retrieval Options
EMBASE

0072215587 EMBASE No: 1982082205
Successful treatment of fulminating complications associated with extensive rhabdomyolysis by plasma exchange

Kuroda M.; Katsuki K.; Uehara H.; et-al
Dep. Int. Med., Sch. Med., Kanazawa Univ., Kanazawa, Japan
Corresp. Author Affil: Dep. Int. Med., Sch. Med., Kanazawa Univ., Kanazawa, Japan

Artificial Organs (ARTIF. ORGANS) (United States) December 1, 1981 , 5/4 (372-378)
CODEN: ARORD ISSN: 0160564X
Document Type: Journal ; Article Record Type: Abstract
Language: English

...caused by heatstroke and/or electrical injury. Substances derived from damaged muscle tissue, such as myoglobin and enzymes, were efficiently removed by a cellulose acetate membrane filter. Improvement of consciousness, disturbance, coagulation disorder, and renal failure were observed. The disorders associated with... ...rhabdomyolysis seem to be a promising indication for this therapy. Plasma exchange with a membrane filter is useful for treatment of patients with renal failure, being readily connected on line with...
Medical Descriptors:
blood and hemopoietic system; brain injury; case report; central nervous system; kidney; kidney failure; muscle; therapy

9/3,K/29 (Item 6 from file: 73) Links
Fulltext available through: STIC Full Text Retrieval Options
EMBASE

0070001907 EMBASE No: 1974001907
Analytical determination of metmyoglobin and its utilization in the hospital

ANALYTISCHE BESTIMMUNG VON METMYOGLOBIN UND IHRE ANWENDUNG IN DER KLINIK
Peham H.
I. Med. Univ. Klin., Wien, Austria
Corresp. Author Affil: I. Med. Univ. Klin., Wien, Austria

Verhandlungen der Deutschen Gesellschaft fur Innere Medizin (VERH. DTSCH. GES. INN. MED.) December 1, 1971 , 77/- (1121-1123)
CODEN: VDGIA ISSN: 00704067
Document Type: Journal ; Article Record Type: Abstract
Language: German

Biopsy specimens were wiped free of blood on filter paper and immediately frozen in liquid nitrogen. The specimen was broken into small pieces and... ...centrifuge tube and spun at 140,000 g for 10 min. The supernatant was carefully removed with a syringe and injected into a Sephadex G50 column. The column was eluted with...
Drug Descriptors:
* metmyoglobin; *myoglobin

9/3,K/30 (Item 1 from file: 155) Links
Fulltext available through: STIC Full Text Retrieval Options

15120057 PMID: 15462110
Safety and efficacy of fluvastatin in hyperlipidemic patients with chronic renal disease.

Yasuda Gen; Kuji Tadashi; Hasegawa Kyoko; Ogawa Nariaki; Shimura Gaku; Ando Daisaku; Umemura Satoshi
Center Hospital, Yokohama City University School of Medicine, Yokohama, Japan.
y911429@urahp.yokohama-cu.ac.jp
Renal failure (United States) Jul 2004 , 26 (4) p411-8 , ISSN: 0886-022X--Print Journal Code: 8701128
Publishing Model Print
Document type: Clinical Trial; Journal Article; Randomized Controlled Trial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
...of 48 weeks. Lipid parameters, rhabdomyolysis-related indicators, 24-hour urinary albumin excretion and creatinine clearance were measured. The pharmacokinetics of fluvastatin was examined in 8 patients. RESULTS: Creatinine clearance and 24-hour urinary albumin excretion did not differ between the two groups. The peak...
; Adult; Aged; Albuminuria--prevention and control--PC; Chronic Disease; Creatinine--blood--BL; Creatinine--urine--UR; Diabetic Nephropathies--metabolism--ME; Fatty Acids, Monounsaturated --pharmacokinetics--PK; Glomerular Filtration Rate; Glomerulonephritis--metabolism--ME; Humans; Hydroxymethylglutaryl-CoA Reductase Inhibitors--pharmacokinetics--PK; Hyperlipidemias--metabolism--ME ; Indoles--pharmacokinetics--PK; Middle Aged; Myoglobin-- blood--BL; Prospective Studies
Chemical Name: Fatty Acids, Monounsaturated; Hydroxymethylglutaryl-CoA Reductase Inhibitors; Indoles; Myoglobin; Creatinine; fluvastatin

9/3,K/31 (Item 2 from file: 155) Links
Fulltext available through: STIC Full Text Retrieval Options

08296103 PMID: 2595459
[Serum myoglobin levels in patients with acute and chronic renal insufficiency]

Ispitivanje nivoa mioglobina u serumu bolesnika sa akutnom i hronicnom bubreznom insuficijencijom.
Stefanovic V; Miljkovic P; Lecic N; Bogicevic M

Srpski arhiv za celokupno lekarstvo (YUGOSLAVIA) May-Jun 1989 , 117 (5-6) p301-11 , ISSN: 0370-8179--Print Journal Code: 0027440
Publishing Model Print
Document type: English Abstract; Journal Article
Languages: SERBIAN
Main Citation Owner: NLM
Record type: MEDLINE; Completed
[Serum myoglobin levels in patients with acute and chronic renal insufficiency]
The serum level of myoglobin was studied in 20 patients with acute renal failure, in 16 chronic renal failure patients and in 94 patients on maintenance haemodialysis. The serum myoglobin level was significantly increased in the oligoanuric phase of acute renal failure, rapidly decreased during... ...apparently normal values in the recovery phase. In patients with chronic renal failure the serum myoglobin level correlated with serum creatinine and creatinine clearance as a measure of the glomerular filtration rate, indicating a major role of kidney in the metabolism of this low-molecular weight protein. It was established that myoglobin could not be removed by dialysis membrane and analysis of the myoglobin level in endstage kidney disease patients on maintenance hemodialysis has shown an important extrarenal catabolism...
Descriptors: *Kidney Failure, Acute--blood--BL; *Kidney Failure, Chronic--blood--BL; *Myoglobin--blood--BL
Chemical Name: Myoglobin

9/3,K/32 (Item 3 from file: 155) Links
Fulltext available through: STIC Full Text Retrieval Options
MEDLINE(R)

07930315 PMID: 3221831
[A new procedure for prevention of MNMS using a plasma filter]

Ichiwata M
Second Department of Surgery, Nihon University School of Medicine, Tokyo, Japan.
Nippon Geka Gakkai zasshi (JAPAN) Jul 1988 , 89 (7) p1114-21 , ISSN: 0301-4894--Print Journal Code: 0405405
Publishing Model Print
Document type: English Abstract; Journal Article
Languages: JAPANESE
Main Citation Owner: NLM
Record type: MEDLINE; Completed
[A new procedure for prevention of MNMS using a plasma filter]
...myonephropathic metabolic syndrome (MNMS) following acute arterial occlusion of the extremities, the efficacy of plasma filtration to eliminate myoglobin which causes acute renal failure and other metabolites was evaluated by experimental model. Twenty five... ...consisted of the dogs without any treatment and group 2 dogs were treated by plasma filtration. The changes in serum myoglobin, potassium, lactic acid and etc. were compared between the two groups. The plasma filter was hollow-fiber type that was made of polypropylene fiber. The serum level of myoglobin, potassium, CPK, GOT and BUN tended to decrease remarkably after revascularization in group 2 in... ...2 than group 1, those were not significant statistically. In conclusion, the application of plasma filter was effective for the treatment of hyperkalemia and removal of myoglobin and unknown moderate molecular weight pathogenic substances to prevent MNMS.
Descriptors: *Hemofiltration; *Kidney Failure, Acute--prevention and control--PC; *Myoglobin--blood--BL ; Animals; Arterial Occlusive Diseases--complications--CO; Dogs; Kidney Failure, Acute--etiology--ET; Lactates--blood--BL; Potassium--blood--BL
Chemical Name: Lactates; Myoglobin; Potassium

9/3,K/33 (Item 4 from file: 155) Links
Fulltext available through: STIC Full Text Retrieval Options
MEDLINE(R)

07114535 PMID: 3740057
Myoglobinuria in chronic renal failure.

Feinfeld D A; Briscoe A M; Nurse H M; Hotchkiss J L; Thomson G E
American journal of kidney diseases - the official journal of the National Kidney Foundation (UNITED STATES) Aug 1986 , 8 (2) p111-4 , ISSN: 0272-6386--Print
Journal Code: 8110075
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Serum and urine myoglobin levels were determined on 14 patients with stable chronic renal failure. Serum myoglobin ranged from 38 to 350 ng/mL. Eleven patients had myoglobinuria between 15 and 250 ng/mL; none developed myoglobinuric renal failure. Fractional excretion of myoglobin in the myoglobinuric patients increased as creatinine clearance decreased, although there was no correlation between filtered load and excretion rate of myoglobin. This confirms that renal failure leads to hypermyoglobinemia and usually to myoglobinuria. Surviving nephrons tend to reabsorb less of the filtered load of myoglobin as renal function diminishes.
; Glomerular Filtration Rate; Humans; Kidney Failure, Chronic-- blood--BL; Kidney Failure, Chronic--physiopathology--PP; Kidney Failure, Chronic--urine--UR; Myoglobin--blood--BL; Myoglobinuria--blood--BL; Myoglobinuria--physiopathology--PP
Chemical Name: Myoglobin

9/3,K/34 (Item 5 from file: 155) Links
Fulltext available through: STIC Full Text Retrieval Options
MEDLINE(R)

04667662 PMID: 340602
Myoglobin turnover--influence of renal and extrarenal factors.

Hallgren R; Karlsson F A; Roxin L E; Venge P
Journal of laboratory and clinical medicine (UNITED STATES) Feb 1978 , 91 (2) p246-54 , ISSN: 0022-2143--Print Journal Code: 0375375
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Myoglobin turnover--influence of renal and extrarenal factors.
The serum level of myoglobin, an LMW constituent of striated and myocardial muscle, has been studied in various clinical situations in order to obtain information about factors influencing myoglobin turnover. The myoglobin level was significantly correlated to different variables of GFR such as serum beta2-microglobulin, serum creatinine, and 51Cr-EDTA clearance. Following a successful renal transplantation rapid decrease in serum myoglobin was found parallel to increase in GFR's. In patients with advanced long-standing uremia, comparatively small elevations of serum myoglobin were seen when correlated to the degree of GFR reduction, demonstrating an influence of extrarenal factors on the myoglobin levels. The importance of extrarenal factors on the actual serum level of LMW proteins was... ...by serial studies on SLE patients receiving corticosteroid therapy. In these patients, elevations of serum myoglobin levels were found, but serum beta2-microglobulin levels gradually decreased during therapy. Finally, calculations based on curves of serum disappearance of myoglobin in patients with acute myocardial infarction indicate that only about 0.3 mg of myoglobin per day is released from the muscle pool during normal conditions, which suggests that myoglobin catabolism mainly occurs within the muscle tissue.
Descriptors: *Kidney--physiology--PH; *Kidney Diseases--metabolism--ME; *Myoglobin--metabolism--ME ; Adolescent; Adult; Aged; Creatinine--blood--BL; Glomerular Filtration Rate; Glomerulonephritis--metabolism--ME; Humans; Kidney

Transplantation; Middle Aged; Myocardial Infarction--metabolism--ME; Myoglobin--blood--BL; Radioimmunoassay; Transplantation, Homologous; beta 2-Microglobulin--metabolism--ME
Chemical Name: Myoglobin; beta 2-Microglobulin; Creatinine

9/3,K/35 (Item 1 from file: 399) Links
CA SEARCH(R)

147285011 CA: 147(13)285011t PATENT
Elimination of myoglobin from blood using an i v filter
Inventor (Author): Al-Hossary, Amr Ali Mokhtar
Location: Egypt,
Patent: Egypt. ; EG 23584 A Date: 20060911
Application: EG 1025 (20031111)
Pages: 13pp.
CODEN: EGXXAY
Language: Arabic
Patent Classifications:

IPCR/8 + Level	Value	Position	Status	Version	Action	Source Office:
A61F-0002/01	C	I	R	20060101	20051110	M EP
A61F-0002/01	A	I	R	20060101	20051110	M EP

9/3,K/36 (Item 2 from file: 399) Links
CA SEARCH(R)

143032444 CA: 143(2)32444k PATENT
Hollow fiber membrane-type blood purification apparatus with reduced reverse filtration and improved removal of low-molecular weight protein
Inventor (Author): Kato, Noriaki; Morita, Junsuke
Location: Japan,
Assignee: Toyobo Co., Ltd.
Patent: Japan Kokai Tokkyo Koho ; JP 2005152295 A2 Date: 20050616
Application: JP 2003395116 (20031126)
Pages: 14 pp.
CODEN: JKXXAF
Language: Japanese
Patent Classifications:
Class: A61M-001/18A

9/3,K/37 (Item 1 from file: 35) Links
Dissertation Abs Online

01905101 ORDER NO: AADAA-I3062118
The effects of creatine supplementation on renal function in athletes during physical stress

Author: Boswell, Lanny Lee
Degree: Ph.D.
Year: 2002
Corporate Source/Institution: University of Virginia (0246)
Source: Volume 6308B of Dissertations Abstracts International.
PAGE 3682 . 217 PAGES
ISBN: 0-493-78107-2

...exercise test day. Measurements included; body composition and total body water measurement testing, iohexol plasma clearance tests for glomerular filtration rate (GFR), and body core temperature. Subjects completed a continuous 30-minute treadmill exercise session... ...to elicit a VO₂ approximating 80% of

their VO_{2max}. Blood samples were taken at 10-min intervals for a four-hour period and analyzed for blood urea nitrogen, serum creatinine, hemoglobin and hematocrit concentration, serum electrolytes and serum osmolality. Urine specimens were analyzed for myoglobin levels. <italic>Results</italic>. A significant effect for exercise was observed for a decrease in...

9/3,K/38 (Item 1 from file: 135) Links
NewsRx Weekly Reports

0000495033 (USE FORMAT 7 OR 9 FOR FULLTEXT)

Researchers' findings from University of Illinois, U.S., advance research

Pharma Business Week, April 9, 2007, p.2487

DOCUMENT TYPE: Expanded Reporting LANGUAGE: English
RECORD TYPE: FULLTEXT

Word Count:
1044

...TEXT: microfluidic flow-flash method to probe the kinetics of CO recombination or O2 binding to myoglobin after the laser-induced photolysis of CO from myoglobin by UV/visible absorbance spectral imaging." Toepke and colleagues published their study in Analytical Chemistry...
...Chemical and Biomolecular Engineering and Dept. of Biochemistry, Urbana, Illinois 61801 USA. Study 2: Aggressive blood pressure control is well tolerated in African Americans with hypertensive kidney disease. "The African American...

...Kidney Disease and Hypertension was a multicenter trial comparing the effects of 2 levels of blood pressure control (usual or low goal) and initial therapy with metoprolol, ramipril, or amlodipine. We...

...Average age was 55 years, 61% were men, and the mean of the first glomerular filtration rate in the study was 46 mL/min/1.73 m 2 (0.76 mL/s). No significant differences in HRQOL were seen between the low- and usual-blood-pressure groups. Reported side effects also were similar between blood-pressure groups," wrote J.P. Lash and colleagues, University of Illinois. They continued, "Mean Physical...

...in the ramipril group than amlodipine group (1.20+/-0.61)." The researchers concluded, "Aggressive blood pressure control is well tolerated in African Americans with hypertensive kidney disease, measured by using...

...decreases in PHC and MHC scores in the ramipril compared with metoprolol group is not clear." Lash and colleagues published their study in the
... Quality of life in the African American Study of Kidney Disease and Hypertension: Effects of blood pressure management. Am J Kidney Dis, 2006;47(6):956-964). For additional information, contact...

9/3,K/39 (Item 2 from file: 135) Links
NewsRx Weekly Reports

0000457046 (USE FORMAT 7 OR 9 FOR FULLTEXT)

Recent findings from University of Western Ontario, Canada, illuminate medical research

Pharma Business Week, February 26, 2007, p.1375

DOCUMENT TYPE: Expanded Reporting LANGUAGE: English
RECORD TYPE: FULLTEXT

Word Count:
1275

... J. Chromatogr. A 1073 (2005) 175]."
"Two buffers of different pH created a junction to trap the sample molecules at their isoelectric points and resulted in over 1000-fold preconcentration for myoglobin within 30 min. To study the formation of pH junctions in CE, a pH indicator...
...visualizing the changes in pH at the junctions created by various buffer combinations. Preconcentration of myoglobin was performed in discontinuous buffers containing BTB. Major differences in the BTB absorption profiles were...

...for the identification of ideal buffers for sample preconcentration. Up to 2000-fold preconcentrations of myoglobin were achieved in the buffer systems studied in this work. In addition, the role of...

...years after a drinking water outbreak of O157:H7, we examined the risk of high blood pressure (>95th percentile expected for age, sex, and height), reduced kidney function, and microalbuminuria among...

...during the outbreak were excluded from this analysis.
"There were no differences in mean systolic blood pressure between those who had no, moderate, or severe symptoms of acute gastroenteritis during the outbreak (109, 110, and 107 mm Hg)."
"Similarly, there were no group differences in diastolic blood pressure, estimated glomerular filtration rate, or random urine albumin to creatinine ratio (P ranged from 0.14 to 0.52), or in the adjusted relative risk of high blood pressure, a glomerular filtration rate <80ml/minute per 1.73 m , or microalbuminuria (P ranged from 0.23 to...
...cement technique and 78 points following the revisions done with the traditional method of cement removal and insertion of a revision component. Complications included seven intraoperative cortical perforations; five nerve injuries...

9/3,K/40 (Item 1 from file: 266) Links
FEDRIP

00554226
Identifying No.: 0188976 Agency Code: AGRIC
Investigation into Inhibition of Hemoglobin-Mediated Lipid Oxidation in Cooked and Uncooked Muscle Foods

comparative analysis
Associate Investigators: Richards, M. P.
Performing Org.: UNIV OF WISCONSIN, ANIMAL SCIENCES , MADISON , WISCONSIN 53706
Summary: ...these studies that investigate the ability of fish and poultry hemoglobins to promote lipid oxidation. Blood from chickens and rainbow trout will be obtained from on campus sources. Hemolysate will be ... ...by repeated washing of erythrocytes with isotonic saline before rupturing with 1 mM Tris. Gel filtration will be used to further purify
hemoglobins. After adding trout and poultry hemoglobins separately to... ...offs will also be used to
determine the molecular weight of the inhibitory component. Gel filtration will be used as an alternative when a cleaner size separation is required although amounts... ...stable, this will be ideal to further isolate the active inhibitor since the heating will remove a number of proteins which will make it easier to perform separation procedures compared to...
Descriptors: lipid oxidation; fish; poultry meat; hemoglobin; myoglobin; inhibitors; antioxidants; cooked meat; raw meat; heme; gel filtration; dialysis; iron; filtration; cod; washing; rainbow trout; product improvement; aquaculture; biochemistry; performance evaluation; extraction; erythrocytes; protein purification; measurement...

9/3,K/41 (Item 1 from file: 149) Links
TGG Health&Wellness DB(SM)

02931386 Supplier Number: 90569942 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Correspondence.

Southern Medical Journal , 95 , 8 , 945(6)
August ,
2002
Publication Format: Magazine/Journal
ISSN: 0038-4348
Language: English
Record Type: Fulltext Target Audience: Professional
Word Count: 5636 Line Count: 00478

...If a quarter of all deaths are caused by common, recreational substance use, it is clear to me that taxing those substances to the extent that they generate expenses by causing disease, and applying those funds to pay for only those diseases, would have the following clearly beneficial effects: it would reduce the health insurance bill of the nation, allowing more people...
...that male neonatal nontherapeutic circumcision is not a recommended procedure. (7)
Thus, it is now clear that medical doctors must impart all material information to the parents, not only about circumcision...

...the right side. Renal perfusion scan revealed diminished function of both kidney with a glomerular filtration rate of 68 mL/min/(m.sup.2) Her initial laboratory results revealed a normal...

...the obstruction.
Over a period of 6 years, the patient's condition deteriorated, with uncontrolled blood pressure and worsening kidney function. She underwent several laparotomies for lysis of adhesions around the...

...suggested a trial of medical therapy. At that time, her physical examination was remarkable for blood pressure level of 158/95 mm Hg and a palpable mass in the left lower...

...CT scans showed progressive resolution of the mass. Over a period of 18 months, her blood pressure came under control, with improvement in her renal function to a glomerular filtration rate of 95 mL/min/(m.sup.2), and a decrease in her serum creatinine...

...degrees) F, his heart rate was 121 beats/min, he was tachypneic, and there was blood in his nasogastric tube. Chest examination revealed bilateral inspiratory crackles posteriorly. The abdomen was distended and tender, and his rectal tube contained bloody fecal material. A Foley catheter contained scanty, blood-tinged urine. Results of tests for urinary legionnaire's-disease antigen and Lyme-disease antibody...

...urine electrolyte levels, were pending. On admission, pertinent laboratory data included the following values: white blood cell (WBC) count, 17.5 x (10.sup.3)/(micro)L (89% polymorphs); hematocrit, 24...

...dL; phosphorus, 10.2 mg/dL; chloride, 113 mEq/L; carbon dioxide, 11 mmol/L; blood urea nitrogen, 139 mg/dL; creatinine, 9.4 mg/dL; aspartate aminotransferase, 1,384 U...

...mg/dL; amylase, 209 U/L; lipase, 342 U/L; creatinine phosphokinase, 229 IU/L; myoglobin, 1,872 ng/mL. Arterial blood gases were pH, 7.20; p(CO.sub.2), 24 mm Hg; p(O.sub...

...no perforation. The patient's respiratory distress worsened, and it was necessary to intubate him. Blood transfusion was performed, and daily hemodialysis was initiated. Intravenous treatment with doxycycline and levofloxacin continued...

...glucose level, WBC count of 6/(micro)L (all polymorphonuclear neutrophils), and 8,550 red blood cells/(micro)L (traumatic tap). Endoscopy demonstrated multiple bleeding ulcers in the stomach and esophagus...

...were negative. Laboratory evaluation showed features of disseminated intravascular coagulation. Following infusions of packed red blood cells and FEP, a renal biopsy was done. Pathologic examination revealed acute tubular necrosis (ATN...

...brainstem herniation, and he died 11 days after admission. All culture results and other outstanding blood test results were negative. Hepatitis serology showed only he patitis B surface antibody. CSF studies ...

...test results in such cases. (2) The latter is particularly true in tularemia, where positive blood culture results remain extremely rare. (5) Once tularemia is suspected, appropriate broad-spectrum antibacterial therapy...

...19:1-83

(5.) Proveoza JM, Klotz SA, Penn RL: Isolation of Francisella tularensis from blood. J Clin Microbiol 1986; 24:453-455

Relapsing Group B Streptococcal Bacteremia

To the Editor...

...occurred 10 months previously, when the patient presented with nausea and chills. Two sets of blood cultures were positive for group B streptococci (GBS). She was treated empirically with intravenous piperacillin...

...The patient responded to therapy, and was treated with intravenous antibiotics for 1 week. Subsequent blood cultures were negative for GBS, and the patient was treated with cephalexin for 2 more...

...nausea, vomiting, and headache. She was empir ically treated with intravenous vancomycin and ceftriaxone sodium. Blood cultures were again positive for GBS. Findings on CT scans of the abdomen and head...

...the need for a partial colectomy. She denied any history of intravenous drug use or blood transfusion.
On presentation, her temperature was 101.2(degrees)F, and her vital signs were...

...rim without exudate or motion tenderness. Results of laboratory tests revealed the following values: white blood cell count, 3,500/m(m.sup.3) hemoglobin, 12.3 g/dL; platelet count...

...1.7.
Empiric therapy with intravenous vancomycin, aztreonam, and metronidazole was begun. Two sets of blood cultures were positive for GBS. The urine culture was also positive for > (10.sup.5...

...and the right lower quadrant pain resolved. No growth was observed in any of the blood cultures 3 days after admission, Findings on CT of the abdomen and pelvis were normal...

9/3,K/42 (Item 2 from file: 149) Links
TGG Health&Wellness DB(SM)

02923638 Supplier Number: 81221154 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Current approaches to pediatric crush injury.

Stewart, Charles; Stafford, Perry W.
Pediatric Emergency Medicine Reports , 6 , 12 , 129(12)
Dec ,
2001
Publication Format: Newsletter
ISSN: 1082-3344
Language: English
Record Type: Fulltext Target Audience: Professional
Word Count: 10251 Line Count: 00915

...later research led to the demonstration that the nephrotoxic agent released by damaged muscle was myoglobin. (2) He went on to demonstrate that myoglobin is nephrotoxic in acid but not in alkaline urine, and described the initial treatment that...

...Crush injuries also may be seen in isolated individuals who work under cars or are trapped in collapsed excavations or ditches. In disasters and excavations, extrication often is prolonged when specialized ...

...In Dr. Bywaters' rabbit model, up to one-third of the body water may be trapped in the injured muscle. This corresponds to human clinical experience. Better and associates estimated that...

...of the muscle. As a consequence of this pressure, the muscle is destroyed and releases myoglobin, potassium, and phosphorus into the tissues. (18)
In a continuous crushing injury, muscle breakdown products are not released into the circulation until the trapped extremities are freed and decompressed. There are many anecdotal reports of patients who are freed...

...be explained by sudden hypovolemia, as described above, combined with

acidosis and the release of trapped myoglobin, potassium, and phosphorus as circulation is restored.

Rhabdomyolysis may occur after severe exercise, particularly in...

...cooling, and degradation of enzymes by heat. The subsequent hypovolemia, coupled with the release of myoglobin from damaged muscle, leads to a decreased glomerular filtration rate, metabolic acidosis, an acidic urine pH, and subsequent myoglobin-induced renal failure. Similar situations may occur with amphetamines and other drugs of abuse. (19...

...circulation and cause ischemic muscle cell death. After the ischemic cell is reperfused, restoration of blood flow causes an infusion of calcium, generation of free radicals, production of mitochondrial superoxide and...

...chronic and acute ethanol intake, electrolyte abnormalities, sew eral infectious organisms, heatstroke, and hypothermia. (22)

Myoglobin. Myoglobin is found in both cardiac and skeletal muscle and released when the sarcoplasm is destroyed. Myoglobin is an oxygen-binding, single peptide molecule containing an iron-porphyrin (heme) group and a folded peptide (globin) group. Myoglobin is related to hemoglobin and the single heme group in myoglobin is the same as that found in hemoglobin. Myoglobin is about one-fourth of the molecular weight of hemoglobin, which has four such heme/globin moieties. The molecular weight of myoglobin is 17,500 daltons, and the molecule is a folded 153-amino acid polypeptide chain. (23)

Myoglobinuria is an abnormal pathologic state in which an excess of myoglobin is found in the urine. Myoglobin is normally excreted in minute amounts in the urine. The term "myoglobinuria" has been used...

...rhabdomyolysis in some literature, which underscores the muscle necrosis that causes the excess release of myoglobin.

Normal serum myoglobin concentration is 85 nanograms/mL or less. If more than 200 g of muscle are injured, serum myoglobin levels will rise to greater than 1.5 mg/dL, and detectable myoglobinuria will result. (24) Myoglobin rapidly is cleared from the urine, so the period of myoglobinuria is short and may be missed.

Myoglobin has a toxic effect on tubular epithelium if the urine pH is less than 5.4 (acidic urine). The myoglobin will dissociate into globin and ferrihemate. The ferrihemate moiety is toxic to the renal tubular...

...A urinalysis may reveal a muddy brown color. Microscopic examination may show a few red blood cells (RBCs) and pigmented urinary casts. (27)

Myoglobin is detectable with the same dipstick tests that detect hemoglobin. The ortho toluidine tests detect the presence of the heme moiety and do not differentiate between hemoglobin and myoglobin.

Laboratory testing for myoglobin in both urine and serum should be obtained. A fresh specimen of urine should be...

...in color and react for hemoglobin with the benzidine test.

Unfortunately, a negative dipstick for myoglobin does not always rule out rhabdomyolysis. As noted above, myoglobin is freely filtered in the glomerulus and rapidly cleared from the blood stream. If the urine isn't checked a few hours after the injury, and if...

...not released in hemoglobinuria.

Serum CPK levels are more likely to be elevated than serum myoglobin levels because of the slower plasma clearance of CPK. The serum half-life of CPK is about 1.5 days. (28) A...

...Superimposed on this setting of decreased renal perfusion is the presence of potentially toxic circulating myoglobin. Recent studies provide strong evidence to the direct cytotoxic effect of the hemeproteins on the...

...cell. (21) Vasoactive peptides may result in renal vasoconstriction and enhance the toxic effects of myoglobin.

These same studies have provided insight into the role of the reactive oxygen molecule in...

...and there is accumulating evidence that renal glutathione is depleted by large amounts of circulating myoglobin. (36) This depletion may be prevented by the administration of glutathione.

Finally, myohemoglobin combines with...

...the tubule and increases the intratubular pressure. This leads to an acute reduction of glomerular filtration. Alkalization of the urine prevents this cast formation.

Many patients will maintain a relatively normal...

...next 2-3 days, the patient will develop progressive oliguria. As the output drops, the blood urea nitrogen, potassium, and the creatinine will rise. Appropriate rehydration and supportive measures may prevent...

...the age and weight of the child. In a recent Israeli study of seven victims trapped in a building, this pre-extrication volume loading appeared to prevent acute renal failure in...

...IV lines should be started in situ if at all possible. (42) Close monitoring of blood pressure and pulse should be maintained for at least 12 hours after extrication in all...

...below is important.

Laboratory studies should include CPK, urinalysis with micro and dipstick examination, complete blood count, electrolytes, blood urea nitrogen (BUN), creatinine, glucose, calcium, phosphorus, uric acid, albumin, and serum protein. Clotting studies...

...depending on the clinical severity of the patient. Urine and serum may be sent for myoglobin, but clinical judgments should not depend on this procedure.

Indications for emergent dialysis include persistent...

...pulmonary edema and congestive heart failure may be relieved by acute dialysis. Dialysis will not remove myoglobin from the circulation because of the size of the molecule. Similarly, plasma exchange is ineffective for clearing myoglobin. Continuous arteriovenous hemofiltration and continuous venous hemofiltration have been shown to remove myoglobin in animal models.

Compartment Syndrome

In 1881, Richard Von Volkmann described paralysis and subsequent contracture...

...tightly wrapped splinting bandages used for fractures. He suggested that the bandages interrupted the arterial blood supply and that subsequent ischemia led to the paralysis and contractures. Later, authors reported that...

...systemic intoxication. A similar presentation has been reported in carbon monoxide poisoning, and after being trapped in confined spaces. (64) The patient is unable to roll or shift weight and relieve... compartment syndrome.

First Things First. The very first therapy that should be done is to remove all restrictive dressings. The most common constrictive dressing is a plaster or fiberglass cast. This...

...pain is promptly relieved, then further therapy may not be needed. Air splints and automatic blood pressure cuffs should be deflated or removed. Air splints have caused compartment syndrome when applied in cold weather or at low altitude...

...may require as much as 12 L per day. This should be given until the myoglobin disappears from the urine and may require as long as three days.

Bicarbonate. The urine...

...to each liter of saline infused. This usually will keep the urine alkalotic and prevent myoglobin nephropathy.

Theoretically, bicarbonate may precipitate metastatic calcification within traumatized muscles.

Mannitol. The diuresis can be...

...performed. Although they feel that muscle should be radically debrided, the skin should not be removed, if at all possible. In their opinion, a closed crush injury is not benefited by...

...of this syndrome is not yet known. One hypothesis is that the crushing force drives blood out of the right atrium. This blood moves through the innominate and jugular veins and toward the head. The resulting rapid dilation...

...a hat is worn, the hatband often will be free of petechiae. Stasis of the blood in the small vessels will lead to the purplish discoloration of the skin about the eyelids, nose, and lips. The tympanic membrane can be stained blue from the blood engorgement. Rarely do petechiae extend below the nipple line. These petechiae blanch on pressure. They...

...E.sup.2), F(E.sup.3), and (H.sub.2)(O.sub.2) and myoglobin induced proximal tubular cell attack. Kidney Int 1998;53:1661-1672.

(37.) Pollack UE, Arbel...

the following is correct regarding myoglobinuria?

A. The patient's urine may be brown.
B. Myoglobin has a toxic effect if urine pH is less than 5.4.
C. Myoglobin may dissociate into globin and ferrihemate.
D. Ferrihemate is toxic to renal tubular cells.
E. All of the above.

54. A negative dipstick for myoglobin excludes rhabdomyolysis.

A. True
B. False

55. Which of the following CPK values is suspicious...

9/3,K/43 (Item 3 from file: 149) Links

02747349 Supplier Number: 141172883 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Malignant hyperthermia--the perioperative nurse's role.(Home Study Program)

Hommertzheim, Ruth; Steinke, Elaine E.

AORN Journal , 83 , 1 , 149(16)
Jan ,
2006
Publication Format: Magazine/Journal
ISSN: 0001-2092
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 4574 Line Count: 00467
Author Abstract: ...diagnostic test for MH is the caffeine halothane contracture test. A new molecular genetic diagnostic blood test may offer a less-invasive alternative for some patients.
* HYPERTHERMIA, the cardinal sign of...

...a costly caffeine halothane contracture test (CHCT) on freshly biopsied muscle. (8) The CHCT requires removal of a portion of muscle from the thigh. This muscle segment is stretched on a...

...A molecular genetic diagnostic test is performed, and a DNA analysis is obtained from a blood sample. Unfortunately, not all people who are susceptible to MH have evidence of a DNA...

...test, then that person's relatives may be tested for MH susceptibility with the DNA blood test. Family members who demonstrate a mutation do not need to undergo the muscle biopsy...

...If MH is suspected, perioperative nurses should be prepared to measure additional hemodynamics, including invasive blood pressure monitoring, central venous pressure monitoring, and urine output. Perioperative nurses should be aware that...

...suspected of being susceptible to MH. Perioperative nurses should ensure that patients undergo
* a complete blood count,
* a serum electrolyte count (eg, potassium, magnesium, phosphate, blood urea nitrogen, calcium, creatine phosphokinase); and
* coagulation studies. (14)
When performing surgery on a patient...

...the use of nontriggering general anesthetic agents. Intraoperative monitoring should include pulse oximetry, capnometry, ECG, blood pressure, pulse rate, and temperature, as well as urine output and arterial blood gases.
RESPONDING TO EXHIBITED SIGNS AND SYMPTOMS OF MH
If signs and symptoms of MH...

...the anesthesia care provider with the anesthesia machine, placing IV lines as needed and drawing blood, a second nurse is assigned the role of dantrolene nurse. The dantrolene nurse brings the...

...clinical signs and be prepared to rapidly make a differential diagnosis. A new molecular genetic blood test now is available to determine a patient's susceptibility to MH, but the definitive...

...caffeine halothane contracture test.
2. computerized tomography scan. 3. molecular genetic DNA analysis.
4. white blood cell count.
a. 1 and 3
b. 2 and 4
c. 1, 2, and 3...
...should ensure that the following parameters are measured
1. central venous pressure monitoring.
2. invasive blood pressure monitoring.

3. electrocardiography.
4. end-tidal carbon dioxide.
5. temperature.
a. 1 and 3...

...org.index.cfm/fuseaction/Content.Display/Page PK/MolecularGeneticsFAQ.cfm (accessed 25 Oct 2005).
(9.) "Blood test for MH," MHAUS Malignant Hyperthermia Association of the United States http://www.mhaus.org...

...splints (1 each, pediatric and adult sizes)

Tubes for laboratory tests

6 5-mL heparinized blood gas syringes or ABG kits
2 urine specimen containers
1 bottle urine test strips for myoglobin
6 light blue stoppered tubes (pediatric and adult sizes)
6 lavender stoppered tubes (pediatric and...

...needed

* (Possible) New anesthesia machine and/or new circuit filter and soda absorber
* Central venous Multi-ad fluid transfer
* Laboratory study supplies
* Blood tubes (ie, red stoppered); repeat x 6 for creatine kinase,

...of

lactate dehvdrogenase, sodium (Na), potassium, chloride (CI), calcium (Ca), magnesium, myoglobin
* Heparinized 5 mL blood gas syringes x 6
* Tubes for coagulation studies (eg, prothrombin...

...signs and anesthesia

platelet count, fibrinogen, and fibrin split product)
* Urine specimen container for myoglobin
* Urine dipstick for hemoglobin
* Dantrolene sodium IV, 36 ampules
* 2,000 mL sterile water for injection without a bacteriostatic...

set or mini-spike IV additive pins

Mix:

* Dantrolene 20 mg vial with...

sterile water

Administer:

* Dantrolene 2.5 mg/kg IV for initial bolus kg--x 2 mg = --mg
* This dose may be

order

...an acid pH (see Table 2). The benzidine reagent will give a positive reaction for blood (usually 3+ to 4+), but microscopic examination of the urinary sediment fails to reveal any red blood cells or, at most, only a few (less than 5 per high power field (HPF)) (Bonventre et al., 1995). The fundamental difference between myoglobin and hemoglobin in the plasma is that hemoglobin saturates haptoglobin at a concentration of 100...

...will not appear in the urine until the plasma haptoglobin has become saturated. In contrast, myoglobin has no specific binding protein, so any myoglobin entering the plasma is readily filtered by the glomerulus (Knochel, 1998). The characteristic urine sediment...
...mEq/L) and the (FE.sub.NA) is greater than 1% (Bonventre et al., 1995).
Blood. Serum creatine kinase (CK). Abnormal blood chemistries, especially CK, confirm the presence of muscle injury and help define its extent (Bonventre...

...the detection of rhabdomyolysis due to expense and difficulty, is a more specific marker than myoglobin and CK because it is not present in the myocardium (Syrjala, Zvuori, Huttunen, & Vaananen, 1990...

...Creatinine ratio. A transient elevation of serum creatinine that is disproportionate to the elevation of blood urea nitrogen (BUN) (normal BUN: creatinine ratio 10:1) is frequently seen in acute rhabdomyolysis...

...Profound hypocalcemia (< 3.0 mg/dl) may result as a consequence of hyperphosphatemia and the trapping of calcium in injured muscles (Knochel, 1998). The expected parathyroid hormone-induced rise in 1...

...cases of rhabdomyolysis, it is critical to correct hypovolemia and shock by the infusion of blood and crystalloids (Knochel, 1998). In less severe cases, vigorous intravenous (IV) fluid therapy with isotonic...

...et al., 1995; Star, 1998). The severity of intravascular volume depletion is assessed by the blood pressure, physical examination, and the extent of hemoconcentration from an increase in hematocrit (Bonventre et...

...although controversial, is advocated by many clinicians to improve renal perfusion and prevent intrarenal ferrihemate trapping. The renal vasodilating properties of mannitol and its inhibition of tubular reabsorption of glomerular filtrate...

...liters results in only a trivial increase in plasma osmolarity, so its use must be clearly justifiable in increasing renal perfusion. Zager's (1996) study showed that while mannitol is a...

...blunt the acidification of filtrate in the proximal tubule. This reduces the dissociation of filtered myoglobin into the ferrihemate compound, which causes tubular cell toxicity (Bonventre et al., 1995). The production...

...option in patients with exertional-induced ARF because of the inability of this regimen to clear solutes faster than they appear. Thus, hemodialysis is the preferred method of treatment (Bonventre et...

...choice of dialysate used by the clinician is guided by electrolyte laboratory values. Although the blood flow and dialysate flow are independently determined by the clinician, it is important to keep...
...of other organ symptoms. The diagnosis is confirmed by measuring the serum creatine kinase and myoglobin serum levels. The major complications of rhabdomyolysis include ARF, compartment syndrome, and

cardiac arrest. The...

...phase, the prognosis is excellent.
Teaching Sidebar Syndrome of Acute Renal Failure
Prerenal azotemia: Renal blood flow decreases because of intense, compensatory renal afferent arteriolar constriction. Since renal plasma flow rate is the principal determinant of glomerular filtration rate (GFR), the filtration rate decreases markedly. Typically, there is an increased reabsorption of sodium and water that leads...

...The nurse notes that Mr. Black's serum creatinine is disproportionately high compared to his blood urea nitrogen (BUN). This is based on his/her knowledge that the normal BUN: Creatinine...

...syndromes epilepticus
* Pseudo-crush syndrome

Table 2
Urinalysis Findings

Color	Dark (cola-colored)
pH	Acidic
Blood	
Benzidine reagent	3+ to 4+
Microscopy	Less than 5 RBCs per high power field
Sediment...	

9/3,K/45 (Item 5 from file: 149) Links
TGG Health&Wellness DB(SM)

02227873 Supplier Number: 105439820 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Glomerular filtration: an overview.

Holechek, Mary Jo
Nephrology Nursing Journal , 30 , 3 , 285(8)
June ,
2003
Publication Format: Magazine/Journal; Refereed
ISSN: 1526-744X
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 4350 Line Count: 00389
Glomerular filtration: an overview.
Author Abstract: The formation of urine is a process that begins with glomerular filtration and is greatly influenced by changes in renal hemodynamics. Selective filtration of the blood is possible because of the unique characteristics of the glomerulus and renal circulation. Many factors interact to maintain a consistent blood flow allowing filtration and urine formation to continue despite systemic changes in blood pressure. Factors that impact on renal hemodynamics include the autoregulatory mechanism, the renin-angiotensin mechanism... ...and assist in the treatment of clinical conditions that can alter renal hemodynamics and glomerular filtration.
Goal:
Discuss the principles of glomerular filtration and renal hemodynamics and provide nephrology nurses with the ability to predict, identify and assist in the treatment of clinical conditions that can alter glomerular filtration and renal hemodynamics.

Objectives:
1. Define and explain the process of glomerular filtration.
2. Identify factors that can influence the glomerular filtration process.
3. List methods to measure or estimate glomerular filtration rate (GFR).

Glomerular filtration is the first step in the complex process of urine formation. For filtration to occur, a rapid renal blood flow (RBF) at a consistent pressure is essential. There are many factors that can alter...

...under the condition of stress, multiple factors act and counteract to maintain a normal glomerular filtration rate (GFR) despite changes in RBF. This article will examine the unique characteristics of the renal circulation, describe the physiology of glomerular filtration, review the extrinsic and intrinsic factors that can alter renal hemodynamics, and discuss a clinical...

...in an effort to maintain the RBF and GFR despite systemic pressure changes.

Renal Circulation

Blood flows into the kidneys at a rate of about 1,000-1,200 ml per minute, representing approximately 20%-25% of the cardiac output. This rapid blood flow rate exceeds the metabolic and oxygen needs of the kidneys but facilitates efficient clearance of metabolic waste products.

To understand glomerular filtration, it is essential to consider the special characteristics of the renal circulation. Figure 1 illustrates...

...hydrostatic pressure. Maintaining a hydrostatic pressure of about 50 mmHg is the key to glomerular filtration, as it is needed to overcome other opposing pressures present in the glomerular capillaries and ...

...bundle of capillaries that are highly porous compared to systemic capillaries. The portion of the blood that is not filtered across ,the filtration barriers in the glomerular capillaries returns to the central circulation via the peritubular capillary (PTC...

...the first article in the physiology series for a discussion of the PTC network.)

Glomerular Filtration

Glomerular anatomy. The porous glomerular capillaries rest between the afferent and efferent arterioles (see Figure 2). Their function is to filter large quantities of water and solutes from the plasma. As blood flows through the glomerulus a portion is sieved through the filtering layers of the glomerular capillaries into the Bowman's space. The filtration barrier is composed of three layers that allow for the filtration of solutes (eg., blood urea nitrogen, creatinine, electrolytes) and water, but prevent the loss of blood components such as red and white blood cells and plasma proteins. The three layers are the glomerular capillary endothelium, glomerular basement membrane...

...capsule (epithelial cell layer) (see Figure 2).

(FIGURE 2 OMITTED)

The first layer of the filtration barrier is the capillary endothelium, which has large fenestrations that allow the free filtration of substances with diameters up to 100 nm, thus excluding blood cells and large plasma proteins. The surface of the endothelial cells has a negative charge...

...each other.
The second layer, the glomerular basement membrane, represents the major barrier to the filtration of macromolecules. The glomerular basement membrane is made of fibrous proteins such as collagen, fibrin...

...a meshwork. As the fibers cross each other, small openings are created through which selective filtration occurs. The crossed fibers act as a size barrier and restrict the filtration of large molecules. This layer also contains anionic sialoproteins that further inhibit filtration by repelling other negatively charged ions.
The third layer, composed of epithelial cells, is the...

...the final barrier to molecule movement through the glomerular membrane.
The glomerulus is a selective filtration membrane. The factors that determine which molecules are filtered are molecular size, electrical charge, protein...

...sodium, potassium, chloride, phosphate, magnesium, and calcium) are filtered without restriction. Larger molecules, such as myoglobin with a MW of 17,000 Daltons, are filtered to a lesser degree. Very large...

...weights approaching 70,000 Daltons, are restricted from passing through the normal glomerulus.
As the filtration barrier has a net negative electrical charge, the movement of large negatively charged molecules is...

...drugs, ions, or small molecules bound to protein are not filtered. Round molecules do not filter as easily as ellipsoid molecules. The more rigid a molecule, the less easily it filters...

...carry out some phagocytic activities. They also demonstrate contractile properties and can alter the total filtration surface area.
Mesangial cells contract when exposed to vaso-constrictive substances, such as angiotensin II, thus decreasing the effective filtration surface area and glomerular filtration rate. The special filtering characteristics of the glomerulus coupled with the unique renal circulation allow for effective glomerular filtration to occur.
Glomerular Filtration Rate and Filtration Fraction
Glomerular filtrate moves into the Bowman's space and then into the tubular component of the nephron. In the average 70 kg adult, glomerular filtration rate (GFR) is approximately 125 ml/minute. This means that about 180 L of glomerular...
...produced in a 24-hour period, which is more than 30 times the average total blood volume. All but one to two liters are reabsorbed from the nephron into the peritubular...

...and vasa recta network. The formation of such a large amount of filtrate assures adequate filtration of plasma, but requires very efficient reabsorptive processes to prevent volume and electrolyte depletion.
GFR...

...capillaries into Bowman's space per unit of time, is calculated by determining the renal clearance of a marker substance.
Clearance (CL) is defined as the volume of plasma from which a substance is completely removed or cleared by the kidneys per unit of time. The ideal marker for measuring CL does not...

...there is no naturally occurring ideal marker, endogenous creatinine (Cr) often is used to measure clearance; however, since a small amount of creatinine is secreted into the tubule, GFR measured with creatinine clearance (CrCL) will be overestimated. Since individual GFRs vary widely, a change in GFR over time...

...sub.Cr)
Another method for determining CrCL involves the intravenous injection of a radioactive marker. Clearance of the radioactive marker is assessed by serial scans. The results using this method correlate closely with inulin clearance. The CrCL estimates the GFR and gives a gross indication of how well the kidneys are functioning based on their ability to remove a marker substance.
As using inulin is impractical, urine collections are often inaccurate, and renal...

...a GFR over time.
The glomerular filtrate is derived from the plasma portion of whole blood. The term filtration fraction (FF) describes the percentage of the plasma that becomes glomerular filtrate. Since plasma volume is about 55% of total blood volume, normal renal plasma flow (RPF) is approximately 660 ml/min (1200 ml/min x...

...passing through the glomerulus becomes glomerular filtrate in the average adult.
Pressures influencing normal glomerular filtration. Glomerular filtration is controlled by four pressures, the algebraic sum of which defines the net filtration pressure. These pressures are:
1. Glomerular capillary hydrostatic pressure ((P.sub.GC)), which is the...

...the capillary wall by fluid within the capillary lumen. This pressure is generated by the blood pressure. This value ranges from 40-60 mmHg and favors the movement of fluid from...

...sub.BS)), which is normally 0 mmHg because normal filtrate is void of protein.
Net filtration pressure (NFP), which is the sum of these negative and positive pressures, can be calculated...

...animal models but are thought to be similar to those in humans. Therefore, for adequate filtration to occur, an NFP of approximately 17 mmHg is required to produce approximately 125 ml/min of glomerular filtrate.
As blood progresses through the glomerulus toward the efferent arteriole, the ((PI).sub.GC) increases from 18 to approximately 35 mmHg, reflecting the removal of protein free fluid from the glomerular capillary. (P.sub.GC), (P.sub.BS), and...

...the end of the capillary. The point at which NFP falls to zero is called filtration equilibrium and is the point at which glomerular filtration ceases.
Conditions altering glomerular filtration rate. The GFR can be altered by changes in any of the above four pressures...

...pressure of the increased filtrate volume in the Bowman's space opposes the forces favoring filtration.
If ((PI).sub.BS) rises above 0 mmHg, as it does in nephrotic conditions where...

...membrane, GFR can increase. The presence of plasma proteins in Bowman's space favors increased filtration due to the increased colloid osmotic pressure within that compartment.
A final factor that can...

...II can cause the mesangial cells to contract thereby decreasing the available surface area for filtration resulting in a decreased GFR.
Glomerular filtration is the critical initial step in urine

formation. In order for adequate solute and water removal to occur, glomerular filtrate must be generated at a constant rate. Changes in RPF, hydrostatic...

...intrinsic to the kidneys act simultaneously to minimize the effects of these changes.

Summary

Glomerular filtration is a complex process that is impacted by numerous intrinsic and extrinsic factors that can...

...renal hemodynamics and RBF. These factors interact in an attempt to maintain a consistent glomerular filtration rate under a wide variety of normal and pathologic conditions. If these integrated systems fail...

...can develop with renal function and urine production and excretion. Understanding the physiology of glomerular filtration and the interactions of factors altering renal hemodynamics will help the nephrology nurse in predicting, identifying, and assisting in the treatment of clinical conditions that alter glomerular filtration and renal hemodynamics.

Acknowledgment: The author would like to acknowledge Dr. Milagros Samaniego, Assistant Professor...

...277-311). Philadelphia: W.B. Saunders Co.

Gabbai, F.B., & Blantz, R.C. (2001). Glomerular filtration . In S.G. Massry & R.J. Glassock (Eds.), Textbook of nephrology: Volume I (4th ed...

...J., Greene, T., Rogers, N., & Roth, D. (1999). A more accurate method to estimate glomerular filtration rate from serum creatinine: A new prediction equation. Annals of Internal Medicine, 130, 461-470...

...pp. 319-359). Philadelphia: W.B. Saunders.

Meyers, B.D. (2001). Determinants of the glomerular filtration of macromolecules. In S.G. Massry & R.J. Glassock (Eds.), Textbook of nephrology: Volume I...

...Mosby.

Vander, A.J. (1995). Renal physiology (5th ed). New York: McGraw-Hill Inc

Glomerular Filtration: An Overview

Mary Jo Holechek, MS, CRNP, CNN

Posttest--1.7 Contact Hours

Posttest Questions

(See posttest instructions on the answer form, on page 292.)

1. A rapid renal blood flow rate is necessary to assure

A. the kidneys are oxygenated.

B. efficient clearance of metabolic waste products.

C. the metabolic needs of the kidneys are met.

D. medullary blood flow is maintained.

2. The first point of major vascular resistance in the renal arterial ...

...high pressure system.

B. not affected by systemic arterial pressure changes.

C. freely permeable to blood protein.

D. an impermeable, low pressure system.

4. High pressure in the glomerular capillaries is...

...10%-15%

B. 20%-25%

C. 30%-35%

D. 40%-45%

* Record medications, dosages, time of administration, and response

Medication nurse Cooling...

9/3,K/44 (Item 4 from file: 149) Links
TGG Health&Wellness DB(SM)

02642859 Supplier Number: 135967755 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Acute renal failure related to rhabdomyolysis: pathophysiology, diagnosis, and collaborative management.(Continuing Education)

Russell, Troy A.
Nephrology Nursing Journal , 32 , 4 , 409(11)
July-August ,
2005
Publication Format: Magazine/Journal
ISSN: 1526-744X
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 6725 Line Count: 00603

...a syndrome that results from damage to skeletal muscle that leads to the appearance of myoglobin in the circulation. Myoglobin is filtered by the glomeruli causing elevated levels of urinary myoglobin that can lead to ARF (Visweswaran & Guntupalli, 1999). Although the list of conditions leading to...

...of intracellular contents into the circulation. Muscle ischemia, a frequent cause, results from interruption of blood flow (absolute) or from muscle metabolism that exceeds the ability of its blood supply to provide oxygen (relative) (Bonventre et al., 1995). The most common causes of rhabdomyolysis...

...factors lead to excessive tensile stress that result in muscle fiber injury. Compromised muscle capillary blood flow, coupled with glycogen and creatine high-energy phosphate consumption, results in adenosine triphosphate (ATP...

...of the autogenous phase is muscle cell death and the release of large amounts of myoglobin into the circulation (Zager, 1996).
Myoglobin is a heme pigment, similar to hemoglobin, enclosed in a globin chain with a small...

...Daltons (17 kD), which allows it to be filtered through the glomeruli. Both hemoglobin and myoglobin are reabsorbed in the proximal tubules by endocytosis (ingestion by the cell) (Visweswaran & Guntupalli, 1999
...
...intravascular volume depletion, renal vasoconstriction, or exposure to nephrotoxins, in combination with the presence of myoglobin, can lead to myoglobinuric ARE In the absence of these contributing factors, even with large loads of myoglobin as reflected by high serum concentrations of muscle enzymes, renal failure may not occur (Bonventre...

...be confused with rhabdomyolysis. In addition, renal pigment injury from hemoglobin resembles pigment injury from myoglobin, which illustrates the importance of laboratory testing (Visweswaran & Guntupalli, 1999). Exertional rhabdomyolysis frequently occurs in...

The major barrier to filtration of molecules in the glomerulus is
A. glomerular capillary endothelium.
B. glomerular basement membrane.
C...

...cells results in a(n)
A. decrease in phagocytic activity.
B. increase in the glomerular filtration rate (GFR).
C. decrease in the surface area available for filtration.
D. increase in catecholamine activity.
9. Which of the following would be found in normal...

...volume overload.
B. dehydration.
C. hypertension.
D. hyperkalemia.
12. The GFR reveals
A. how rapidly blood flows through the kidney per unit of time.
B. the volume of solutes removed from the blood per unit of time.
C. the rate at which solutes and water are reabsorbed by...

...13. The production of massive amounts of glomerular filtrate is essential to
A. assure adequate filtration of the complete plasma volume.
B. maintain a normal systemic blood pressure.
C. assure efficient removal of blood proteins.
D. prevent circulatory collapse.
14. What is an ideal marker to measure glomerular filtration?
A. Creatinine.
B. Urea.
C. Inulin.
D. Potassium.
15. You are seeing Mrs. Sue in...

...the use of which method to estimate the GFR?
A. 24 hour urine.
B. inulin clearance.
C. prediction equation.
D. urea clearance.
18. Glomerular filtration is opposed by which of the following forces?
A. Glomerular capillary hydrostatic pressure.
B. Bowman...
...not be affected.
C. be increased.
D. fall to 0 ml/min.
ANSWER FORM

Glomerular Filtration: An Overview
By Mary Jo Holechek, MS, CRNP, CNN

PPosttest Instructions

* Select the best answer...

...available immediately upon successful c ompletion of the posttest.
Goal: Discuss the principles of glomerular filtration and renal hemodynamics and provide nephrology nurses with the ability to predict, identify and assist in the treatment of clinical conditions that can alter glomerular filtration and renal hemodynamics.

Posttest Answer Grid

Please circle your answer choice:

1. a b c...

...were met

a. Define and explain the process of glomerular filtration.	1	2	3	4	5
b. Identify factors that can influence the glomerular filtration process.	1	2	3	4	5
c. List methods to measure or estimate glomerular filtration rate (GFR).	1	2	3	4	5

3. I verify that I have completed this activity:

(Signature) --

Comments --
--

Suggeste topics...

Descriptors:
...Glomerular filtration rate...

9/3,K/46 (Item 6 from file: 149) Links
TGG Health&Wellness DB(SM)

02099714 Supplier Number: 90098057 (USE FORMAT 7 OR 9 FOR FULL TEXT)
20 Poisoning-induced nephrotoxicity.

Vale, JA
Journal of Toxicology: Clinical Toxicology , 40 , 3 , 264(4)
April ,
2002
Publication Format: Magazine/Journal; Refereed
ISSN: 0731-3810
Language: English
Record Type: Fulltext Target Audience: Professional
Word Count: 2485 Line Count: 00216

Text:

...which consists of a glomerulus (through which large amounts of fluid are filtered from the blood) and a long tubule (in which the filtered fluid is converted into urine). The glomeruli...

...weight, but receive some 22% of the cardiac output (about 1 100mL/min). This substantial blood flow ensures, firstly, that large quantities of oxygen and metabolic substrates are delivered to the...

...maintain function and, secondly, that sufficient plasma is available for the high rates of glomerular filtration that are necessary to preserve homeostasis. Vulnerability of the kidneys to toxic damage: The kidneys are particularly susceptible to poisons that decrease blood pressure, as occurs in poison-induced cardiogenic shock, as a reduction in blood flow will produce cellular anoxia. In addition, because of the

considerable renal blood supply, especially to the cortex which receives about 80% of the total renal blood flow, circulating poisons are delivered to the kidneys in large amount. As many poisons undergo active transport from the blood into proximal tubular cells and then diffuse into the tubular lumen, proximal tubular cells can...

...poison than those present in the plasma. Although the renal medulla receives a much smaller blood flow than the cortex, and therefore relatively less toxic material, counter current mechanisms in the...

...dysfunction. Although renal dysfunction following rhabdomyolysis is multifactorial (renal vasoconstriction, tubular toxicity and luminal obstruction), myoglobin-induced lipid peroxidation is likely to be one of the main mediators. (1) Classification of...ability and in acid excretion. Albuminuria of glomerular origin may also be present. Even after removal from further exposure, renal damage may not be reversible. There is also an association between...

...the kidney is unknown. A recent study has found that workers with one or more blood lead concentrations >40 (micro)g/dL have some degree of renal impairment. (11) It has...

...of membranous glomerulonephritis. The level of proteinuria varies widely and the nephrotic syndrome may develop. Removal from exposure may reduce the degree of proteinuria. In the population exposed to organic mercurials...References: (1.) Holt, S.; Moore, K. Pathogenesis of Renal Failure in Rhabdomyolysis: the Role of Myoglobin. Exp. Nephrol. 2000, 8, 72-76. (2.) Prescott, L.F.; Proudfoot, A.T.; Cregeen, R...

9/3,K/47 (Item 7 from file: 149) Links

02032414 Supplier Number: 79626871 (USE FORMAT 7 OR 9 FOR FULL TEXT)
WHENCE THE "NOBLE SAVAGE".

FRANK, PATRICK
Skeptic (Altadena, CA) , 9 , 1 , 54
Spring ,
2001
Publication Format: Magazine/Journal; Refereed
ISSN: 1063-9330
Language: English
Record Type: Fulltext Target Audience: Academic
Word Count: 5113 Line Count: 00413

...a harmonious eco-serenic balance with nature--the noble savage idea could not be more clearly displayed. As Trey Smith showed us, however, noble savages have no particular cachet unless they...
...In a telling cross-discipline malaprop, Ferguson called it a "cultural Heisenberg effect," thereby conveniently removing the noble savage myth from factual analysis.

In a revealing contrast, however, no claims of...human feces found deposited on a kitchen hearth tested positive for the human muscle protein myoglobin-a definitive indicator of cannibalism. (17)

In a commentary on cannibalism, Ann Gibbons discussed evidence...

...the appeased prey. One could never hunt game to extinction because every animal that was removed subsequently returned. These sorts of views governed the hunting of beaver, caribou, elk, deer and...

...America was a manipulated continent. Indians had long since altered the

landscape by burning or clearing woodland for farming and fuel." (23)

The widespread use of fire was not restricted to... ironmolybdenum-sulfur cofactor of the nitrogenfixing enzyme nitrogenase, and the status of vanadium in the blood cells of tunicates, a filter-feeding marine urochordate.

References

(1.) Grimsley, R. 1972. "Rousseau, Jean-Jacques," in The Encyclopedia of...

9/3,K/48 (Item 8 from file: 149) Links

02001304 Supplier Number: 75819547 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Blood Relatives.(with blood availability at an all-time low, several companies are close to releasing artifical blood products)

WANG, LINDA

Science News , 159 , 13 , 206
March 31 ,
2001
Publication Format: Magazine/Journal
ISSN: 0036-8423
Language: English
Record Type: Fulltext Target Audience: Consumer
Word Count: 2198 Line Count: 00179

Blood Relatives.(with blood availability at an all-time low, several companies are close to releasing artifical blood products)

Text:

First-generation artificial blood is about to hit the market

Last year, the tally of blood transfusions climbed to a record high. More people are donating blood than ever before, but a rapidly aging society is using it up even faster as the number of elective surgeries and medical treatments requiring blood transfusions continues to rise.

This year, things are starting out even worse. "We have in fact seen the worst ... in memory, in terms of blood availability," says Harvey G. Klein, president of the American Association of Blood Banks in Bethesda, Md.

In 1999, the U.S. Food and Drug Administration put a ban on blood donations from people who lived in the United Kingdom for more than 6 months between...

...The spread of AIDS and other bloodborne diseases such as hepatitis has also diminished the blood supply by excluding potential donors.

If only there were substitutes that could fill some of blood's roles in the body, artificial substances that would be free of the supply constraints...

...in general surgery, such products could save lives during emergencies and major disasters in which blood isn't readily available. It could also be a medical boon to developing countries that don't bank blood

For decades, researchers have sought to develop a partial replacement for blood. Now, several companies are about to release the first line of artificial blood products. "I've watched this field over the

last 20 years, and this is the...

...says George Nemo, head of the transfusion-medicine program at the National Heart, Lung, and Blood Institute in Bethesda, Md.

Half the blood supply could potentially be replaced with the new substitutes, claims Robert M. Winslow, president of...

...are far from perfect--and researchers are already developing a more sophisticated generation of artificial blood--they carry the oxygen that will keep people alive.

Blood is a wondrous concoction of red blood cells, white blood cells, platelets, and plasma--which is itself a cocktail of proteins, carbohydrates, hormones, and other biochemicals--that together fight infections, heal wounds, deliver oxygen, and remove wastes.

The molecular heart of blood's oxygen-carrying ability is the protein known as hemoglobin, which jam packs red blood cells. More than 250 million hemoglobin molecules can crowd inside a single cell. Each hemoglobin...

...lungs, where it's exhaled.

Hemoglobin has been a favorite starting point for developers of blood substitutes. For one thing, different blood types, such as type A and type B, are based on different sets of proteins, known as antigens, that cover the surfaces of red blood cells. If a doctor gives a patient the wrong type of blood, that person's immune system will reject the foreign cells.

In the 1960s, researchers tried to circumvent complications from cell-surface antigens by making a blood substitute using free hemoglobin extracted from cells. Surprisingly, the naked molecule turned out to be...

...Normally, hemoglobin exists as a molecule of four tightly bound units. But outside the red blood cell, the units fall apart. In animal studies, the hemoglobin fragments caused kidney damage.

In...

...1970s, the Department of Defense continued supporting the quest to develop free hemoglobin into a blood substitute for wounded troops. This work led to ways of chemically rejoining fragmented hemoglobin molecules...

...whole hemoglobin molecules by polymerizing several of them into sturdier complexes.

A turning point for blood-substitute efforts came in the early 1980s with the rise of AIDS and the realization that HIV could spread the disease through blood. These fears built into "hysteria about the blood supply," recalls Steven Gould, president of Northfield Laboratories in Evanston, Ill. The threat of tainted blood thrust the quiet field of blood-substitute research into the limelight, he says.

The demand for a safe blood product drove companies to try to quickly bring apparent laboratory successes with hemoglobin-based substitutes...

...setback, however, during clinical testing of HemAssist in trauma patients. Of 52 patients receiving the blood substitute, 24 (46 percent) died. Of 46 patients getting a saline solution, only 8 (17...

...are so much bigger than single molecules, which are small enough to slip out of blood vessels. Once out, the molecules gobble up nitric oxide in the vessels' smooth muscle tissue...

...drop in nitric oxide prevents those vessels from relaxing, a condition that leads to high blood pressure. As it turns out, polymerized

hemoglobin is too big to slip through blood vessels and take up nitric oxide, so it's less prone to raise blood pressure than lone hemoglobin molecules are, Olson says.

Researchers have been taking all of these...

...the finish line in the competition to be the first to put a polymerized-hemoglobin blood substitute on the market. Their sources of hemoglobin include cows' blood and unused banked blood older than its 42-day shelf life.

Biopure Corporation of Cambridge, Mass., is a frontrunner in the race with a product based on hemoglobin extracted from the red blood cells of cows. The company has completed clinical trials of the product, called Hemopure, in...

...Laboratories with its polymerized product, PolyHeme, which is based on hemoglobin extracted from outdated human blood. PolyHeme is in the third phase of clinical trials, the final leg of testing before...

...in a similar position, with a polymerized hemoglobin product, called Hemolink, made from outdated human blood. The company has completed the final phase of clinical trials in Canada and has ongoing...

...doesn't rely on hemoglobin at all.

Alliance Pharmaceutical in San Diego has created a blood substitute made of synthetic chemicals called perfluorocarbons. These chains of carbon molecules with many attached...
...Winslow of Sangart. Perfluorocarbons may also provide an alternative for patients who decline any natural blood products for religious reasons.

But Alliance recently suffered a setback. During a clinical trial, patients...

...pipeline. For example, to reduce hemoglobin's tendency to pick up nitric oxide and raise blood pressure, Rice University's Olson aims to alter the molecule's structure and properties.

As a start, he's studying myoglobin, which normally provides muscle cells with oxygen, as a model for hemoglobin. He and his colleagues have engineered myoglobin molecules that remove much less nitric oxide than normal.

Both myoglobin and hemoglobin are proteins with pockets that catch oxygen molecules. To discourage myoglobin from catching nitric oxide as well, the Rice researchers replaced the small amino acids leucine ...

...pocket with tryptophan, a larger amino acid. The substitution reduced the opening, allowing the altered myoglobin to carry oxygen but not nitric oxide. Unfortunately, the modified myoglobin also locked onto the oxygen too tightly. Olson solved that problem by making another amino acid substitution that weakened myoglobin's hold on the oxygen. Animals given this fully modified myoglobin have maintained normal blood pressure.

Baxter Healthcare has worked with Olson's group and made similar changes in hemoglobin. Animals given these modified hemoglobin products have also maintained normal blood pressure.

Researchers at Sangart are trying to increase the length of time hemoglobin products last...

...in a layer of water, creating a complex too large to leak out of the blood vessels, he says.

Taking another tack, researchers at SynZyme in Irvine, Calif., are trying to add more functions of whole red blood cells to hemoglobin products. Red blood cells, for instance, contain enzymes that rid the body of harmful oxygen radicals. These destructive molecules

proliferate when tissues lose blood. In an effort to create a product that mimics the protective function of red blood cells, the researchers are attaching antioxidant enzymes, such as catalase and superoxide dismutase, to hemoglobin...

...a biodegradable membrane that will contain hemoglobin, antioxidant enzymes, and other components of a red blood cell. Unlike real red blood cells, however, these artificial cells would be antigenfree.

Genetic engineers also have joined the quest for blood substitutes. Using recombinant DNA technology, researchers are altering the genes that encode hemoglobin and then...

...Carnegie Mellon University in Pittsburgh have made altered hemoglobin that is stable outside a red blood cell. They reported their research in the Nov. 14, 2000 BIOCHEMISTRY.

None of these products will duplicate all the functions of whole blood. Red blood cells have a membrane that allows them to circulate in the body for a couple of months, whereas the kidneys filter out blood substitutes in days. "You can't keep people in the hospital and keep pouring this...trauma victims and patients undergoing surgery, says Klein. However, at least 30 percent of whole blood goes to people with diseases requiring longer-term blood replenishment, he points out. Bone marrow-transplant patients, for example, need blood or a substitute until their bodies replenish their own supply of red blood cells, which can take weeks.

As a consequence, says Haley, for the foreseeable future, people will still need to donate the real thing, even as artificial blood substitutes finally begin finding their medical niches.

Descriptors:
Blood substitutes...

...Blood transfusion

9/3,K/49 (Item 9 from file: 149) Links
TGG Health&Wellness DB(SM)

01998758 Supplier Number: 75658103 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Rhabdomyolysis: A Case Study.

Wallace, Linda S.
MedSurg Nursing , 10 , 3 , 113
June ,
2001
Publication Format: Magazine/Journal; Refereed
ISSN: 1092-0811
Language: English
Record Type: Fulltext Target Audience: Professional
Word Count: 3911 Line Count: 00561

...cases of acute renal failure, results from injury to skeletal muscle causing the release of myoglobin into the urine. This case study presents' history and physical findings, nursing diagnoses, interventions, and...

...appeared that he may have had a seizure. There was a large amount of dried blood on his left forehead and face. An IV was started and he was transported to...

...mg/100 ml; phosphorus (P) = 6.0 mg/dl; albumin = 2.2 Gm/100 ml;

blood urea nitrogen (BUN): 36 mg/100 ml; creatinine (Cr) = 6.5 mg/100 ml; bicarbonate...

...1.020. Urinalysis reveals a pH of 5, trace protein, 1+ ketones, trace bilirubin, 4+ blood, 1-2 RBCs, and 1-2 WBCs.

Mr. Daniels becomes septic from the pneumonia and...

...the critical care physicians advocate maintaining "renal dose dopamine," the nephrologist advises against this because filtration will not be improved and the resultant urine will be free-water. By the 10th...

...day, he is discharged.

Etiology

Acute renal failure (ARF) is a rapid decline in glomerular filtration rate (GFR) followed by the onset of the retention of metabolic waste products (azotemia) (Thelan...
...2000). It can be classified as prerenal, postrenal, or intrarenal (parenchymal). Prerenal failure occurs when blood flow (perfusion) to the kidneys is reduced. Most often hypovolemia is the cause; however myocardial an excess of myoglobin, an intracellular muscle protein, into the urine (Emadian, Caravati, & Herr, 1996). Rhabdomyolysis may be caused...

...nontraumatic. Contributing factors to Mr. Daniels' rhabdomyolysis include muscle necrosis from prolonged immobility and seizures.

Myoglobin, which is released into the bloodstream by injured muscles, may cause renal ischemia by clogging renal tubules (Douglas, 1992). Furthermore, myoglobin breaks down into ferrihemate and globin. Ferrihemate may be directly toxic to the renal tubules...

...muscle in the first 48 hours. Diminished renal perfusion may be exacerbated by hemoglobin and myoglobin inhibiting the vasodilator effect of nitric oxide, which is the major relaxing factor derived from...

...400 ml/24 hours until laboratory values stop rising. During these first three phases the filtration clearance is approximately 10% of normal. The filtration clearance rises to 50% during the late diuretic phase during which laboratory values begin to decrease...

...is the convalescent phase. Laboratory values continue to stabilize, renal function returns to normal, and filtration clearance and urine output volume return to 97% to 100%. This phase may last from 4 ...

...studies are completed, which are depicted in Table 1.

Table 1.
Laboratory Studies

Serum	Findings
Myoglobin	Myoglobinemia (2-3 times greater than upper normal test limit)
Creatinine	Increased
Blood urea nitrogen (BUN)	Increased
BUN/Creatinine ratio	Decreased
Creatinine kinase (CK)	Increased
Lactate dehydrogenase (LDH...	

...Increased

Uric acid	Increased
Magnesium (Mg)	Increased
Serum osmolarity	Increased Decreased Fixed
Albumin	Decreased
Arterial blood gases (ABGs)	Metabolic acidosis
Urine	
Color	Brownish
Orthotolidine	Positive
Amount	Oliguria in 75% of cases...

...sulfate precipitate test Supernate will be red-brown; reagent test strip will be positive for blood.

Miscellaneous	Uric acid, calculi formation, casts, cellular debris
Serum	Comments
Myoglobin	Not useful in determining severity of rhabdomyolysis in clients with acute pancreatitis (Pezzilli et al...

...types of ARF and disproportionately

to BUN due to release of creatinine from injured cells.

Blood urea nitrogen (BUN)	--
BUN/Creatinine ratio	As creatinine rises more than BUN; 10-20 as...

...K) Due to potassium release from injured muscle cells and decreased ability of kidneys to remove potassium from serum.

Calcium (Ca)	Due to precipitation with phosphorous. During the recovery phase when...

...If hypovolemic.

If hypervolemic.
If kidney loses its ability to concentrate/dilute urine.

Albumin	--

Arterial blood gases (ABGs)	Possibly respiratory alkalosis to compensate for metabolic acidosis.		
Urine			
Color	--		
Orthotolidine	--		
Amount	--		
Fractional...			
...Osmolarity	If kidneys lose ability to dilute/concentrate.		
Ammonium sulfate precipitate test in urine (Trainor & Solomon, 1997).	Differentiates hemoglobin and myoglobin		
Miscellaneous	--		
Renal system impairment can adversely affect ... decreased urine output and hypotension. (WARNING. THIS COULD CHANGE TO FLUID ...urine	initially require urinary output above 200 mL/h, blood pressure within his normal range that...	Weigh daily. Assess skin turgor creatinine, and urine Na. Administer IV fluids with sodium bicarbonate to increase solubility of myoglobin and flush it out in a forced diuresis-increased fluid intake to decrease nephrotoxic effects of myoglobin and to decrease stone formation. While sodium bicarbonate may be beneficial, it may also lead to fluid retention and overload. Provide dialysis or continuous filtration (veno-venous or arterial-venous) as	

		needed for fluid and electrolyte balance.
		Avoid overhydration; monitor blood pressure.
Potential for injury related to altered	Client will have adequate nutrition...	Assess mental status

...carbonate, or calcium

		acetate) with food.
Altered tissue perfusion (renal	Client will have clear	Prevent further

, normal volume tissue breakdown

and muscle) related to prolonged immobility and tissue damage during unconsciousness leading to	urine output.	through proper positioning and maintaining a safe environment.

myoglobin

	Treat hyperkalemia	
release from muscles and movement to renal tubules evidenced...		with calcium gluconate, glucose,

...also

pH of 5; trace protein, 1+ ketones,		be useful.
trace bilirubin, 4+ blood and 1-2 WBCs in urine.		Administer sodium bicarbonate if needed for acid-base control; may decrease

...

...tubules by

		increasing urine pH above 6. Sodium bicarbonate may also increase the solubility of myoglobin thus expediting its removal.
		Administer low-dose (0.5 to 3 mcg/kg/min) dopamine to increase renal perfusion...

...patients with ARF, approximately 70% of those requiring dialysis died in the hospital (Chertow, Christiansen, Cleary, Munro, & Lazarus, 1995). These researchers developed a model for predicting death among these patients. Factors...

...tubular injury and prerenal azotemia (the presence of increased amounts of nitrogenous substances in the blood, consistent with renal ... acute renal failure, the FENa is below 1% because the kidneys sense a decreased circulating blood volume and compensate by retaining sodium. In acute tubular injury the FENa is greater than...

...following defining characteristics of fluid volume deficit: negative intake and output, decreased urine output, decreased blood pressure, increased blood urea nitrogen, increased serum creatinine concentration, and lethargy (unconscious).
Conclusion
Mr. Daniels is a fortunate...

...and collaborative problems (2nd ed.). Philadelphia: J.B. Lippincott.
Chertow, G.M., Christiansen, C.L., Cleary, P.D., Mundo, C., & Lazarus, J.M. (1995). Prognostic stratification in critically ill patients with...with rhabdomyolysis-induced
renal failure may be due to:

a. The clogging of tubules by myoglobin.
b. Hyperperfusion of skeletal muscles.
c. Renal artery occlusion.
d. Vascular pooling.

3. The rhabdomyolysis...

...and prerenal azotemia.

8. What may be added to IV fluids to increase solubility of myoglobin and flush it out in forced diuresis?

a. Glucose.
b. Insulin.
c. Potassium.
d. Sodium...

9/3,K/50 (Item 10 from file: 149) Links

01963676 Supplier Number: 69202160 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Acute Renal Failure Related to Rhabdomyolysis: Pathophysiology, Diagnosis, and Collaborative Management.(Statistical Data Included)

Russell, Troy A.
Nephrology Nursing Journal , 27 , 6 , 567
Dec ,
2000
Document Type: Statistical Data Included Publication Format: Magazine/Journal; Refereed
ISSN: 1526-744X
Language: English
Record Type: Fulltext Target Audience: Professional
Word Count: 6897 Line Count: 00665

Text:

...a syndrome that results from damage to skeletal muscle that leads to the appearance of myoglobin in the circulation. Myoglobin is filtered by the glomeruli causing elevated levels of urinary myoglobin that can lead to ARF (Visweswaran & Guntupalli, 1999). Although the list of conditions leading to...

...of intracellular contents into the circulation. Muscle ischemia, a frequent cause, results from interruption of blood flow (absolute) or from muscle metabolism that exceeds the ability of its blood

supply to provide oxygen (relative) (Bonventre et al., 1995). The most common causes of rhabdomyolysis...

...factors lead to excessive tensile stress that result in muscle fiber injury. Compromised muscle capillary blood flow, coupled with glycogen and creatine high-energy phosphate consumption, results in adenosine triphosphate (ATP...

...of the autogenous phase is muscle cell death and the release of large amounts of myoglobin into the circulation (Zager, 1996).

Myoglobin is a heme pigment, similar to hemoglobin, enclosed in a globin chain with a small...

...Daltons (17 kD), which allows it to be filtered through the glomeruli. Both hemoglobin and myoglobin are reabsorbed in the proximal tubules by endocytosis (ingestion by the cell) (Visweswaran & Guntupalli, 1999 ...

...intravascular volume depletion, renal vasoconstriction, or exposure to nephrotoxins, in combination with the presence of myoglobin, can lead to myoglobinuric ARF. In the absence of these contributing factors, even with large loads of myoglobin as reflected by high serum concentrations of muscle enzymes, renal failure may not occur (Bonventre...

...be confused with rhabdomyolysis. In addition, renal pigment injury from hemoglobin resembles pigment injury from myoglobin, which illustrates the importance of laboratory testing (Visweswaran & Guntupalli, 1999). Exertional rhabdomyolysis frequently occurs in...an acid pH (see Table 2). The benzidine reagent will give a positive reaction for blood (usually 3+ to 4+), but microscopic examination of the urinary sediment fails to reveal any red blood cells or, at most, only a few (less than 5 per high power field (HPF)) (Bonventre et al., 1995). The fundamental difference between myoglobin and hemoglobin in the plasma is that hemoglobin saturates haptoglobin at a concentration of 100 ...

...will not appear in the urine until the plasma haptoglobin has become saturated. In contrast, myoglobin has no specific binding protein, so any myoglobin entering the plasma is readily filtered by the glomerulus (Knochel, 1998). The characteristic urine sediment...

...1% (Bonventre et al., 1995).

Table 2
Urinalysis Findings

Color	Dark (cola-colored)
pH	Acidic
Blood	
Benzidine reagent	(3+ - 4+)
Microscopy	(0 - (is less than) 5 RBCs per high power field...

...mEq/L

FENA	(is greater than) 1%

Note: (FE.sub.NA) = fractional excretion of sodium

Blood. Serum creatine kinase (CK). Abnormal blood chemistries, especially CK, confirm the presence of muscle injury and help define its extent (Bonventre...

...the detection of rhabdomyolysis due to expense and difficulty, is a more specific marker than myoglobin and CK because it is not present in the myocardium (Syrjala, Zvuori, Huttunen, & Vaananen, 1990... Creatinine ratio. A transient elevation of serum creatinine that is disproportionate to the elevation of blood urea nitrogen (BUN) (normal BUN: creatinine ratio 10:1) is frequently seen in acute rhabdomyolysis...

...less than) 3.0 mg/dl) may result as a consequence of hyperphosphatemia and the trapping of calcium in injured muscles (Knochel, 1998). The expected parathyroid hormone-induced rise in 1...
...cases of rhabdomyolysis, it is critical to correct hypovolemia and shock by the infusion of blood and crystalloids (Knochel, 1998). In less severe cases, vigorous intravenous (IV) fluid therapy with isotonic...

...et al., 1995; Star, 1998). The severity of intravascular volume depletion is assessed by the blood pressure, physical examination, and the extent of hemoconcentration from an increase in hematocrit (Bonventre et is advocated by many clinicians to improve renal perfusion and prevent intrarenal ferrihemate trapping. The renal vasodilating properties of mannitol and its inhibition of tubular reabsorption of glomerular filtrate...

...liters results in only a trivial increase in plasma osmolarity, so its use must be clearly justifiable in increasing renal perfusion. Zager's (1996) study showed that while mannitol is a...

...blunt the acidification of filtrate in the proximal tubule. This reduces the dissociation of filtered myoglobin into the ferrihemate compound, which causes tubular cell toxicity (Bonventre et al., 1995). The production...option in patients with exertional-induced ARF because of the inability of this regimen to clear solutes faster than they appear. Thus, hemodialysis is the preferred method of treatment (Bonventre et...

...choice of dialysate used by the clinician is guided by electrolyte laboratory values. Although the blood flow and dialysate flow are independently determined by the clinician, it is important to keep...

...of other organ symptoms. The diagnosis is confirmed by measuring the serum creatine kinase and myoglobin serum levels. The major complications of rhabdomyolysis include ARF, compartment syndrome, and cardiac arrest. The...the National Office.

RELATED ARTICLE: Teaching Sidebar
Syndrome of Acute Renal Failure

Prerenal azotemia: Renal blood flow decreases because of intense, compensatory renal afferent arteriolar constriction. Since renal plasma flow rate is the principal determinant of glomerular filtration rate (GFR), the filtration rate decreases markedly. Typically, there is an increased reabsorption of sodium and water that leads...The nurse notes that Mr. Black's serum creatinine is disproportionately high compared to his blood urea nitrogen (BUN). This is based on his/her knowledge that the normal BUN:Creatinine...

9/3,K/51 (Item 11 from file: 149) Links
TGG Health&Wellness DB(SM)

01961995 Supplier Number: 68641610 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Low-dose dopamine in patients with early renal dysfunction: a placebo-controlled

randomised trial.

The Lancet , 356 , 9248 , 2139
Dec 23 ,
2000
Publication Format: Magazine/Journal; Refereed
ISSN: 0099-5355
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 4507 Line Count: 00415

...patients in the belief that it reduces the risk of renal failure by increasing renal blood flow. However, these effects have not been established in a large randomised controlled trial, and...

...use low-dose dopamine in critically ill patients because, in healthy volunteers, it increases renal blood flow and induces natriuresis and diuresis.(1,2) Although these haemodynamic and diuretic effects are...

...than 24 h in the absence of creatine kinase (greater than)5000 IU/L or myoglobin in the urine).

Exclusion criteria were: age under 18 years; an episode of acute renal...as the primary outcome measure because we judged it a clinically appropriate measure of glomerular filtration rate. We assumed that this primary outcome variable would have a normal distribution and an...

...commonly given to patients judged to be at risk of renal failure, to increase renal blood flow and preserve glomerular filtration rate,(11) because it has these effects when infused intravenously in healthy volunteers.(...of acute renal failure.(13) Low-dose dopamine would therefore be expected to increase renal blood flow and help preserve renal cellular oxygenation, glomerular filtration rate, and urine output. These beneficial effects would then prevent acute renal failure. However, dopamine...

...dopamine has a systemic b-adrenergic effect with increases in cardiac output, heart rate, and blood pressure.(11) Such changes in systemic haemodynamics can be achieved with other b-adrenergic agents (dobutamine or dopexamine), are not unique to dopamine, and are likely to affect renal blood flow indirectly. Indeed, even at infusion rates of less than 3 mg kg(21) min...

...mg kg(21) min(21) in most. At such infusion rates, measurements of central haemodynamics clearly show systemic b-adrenergic effects on heart rate and cardiac output.(15) Any beneficial effect...

...to dopamine but would most likely reflect the impact of increased cardiac output on renal blood flow. Indeed, in a randomised, controlled, double-blind crossover comparison, low-dose dobutamine (200 mg/min) improved glomerular filtration rate but dopamine did not.(24)

Doubts about the efficacy of low-dose dopamine as...

...depression of respiratory drive and a proarrhythmic effect.(11) These effects are unpredictable because dopamine clearance and metabolism are altered in acutely ill patients, leading to extreme variability in plasma dopamine...

...29)

Our study, which had sufficient statistical power to detect a small change in glomerular filtration rate, found that the peak serum creatinine concentration was similar in the dopamine and placebo...

...not clinically apparent or measurable with routine tests of renal function. However, maintenance of glomerular filtration rate and urine output are the typical primary goals of clinical intervention, so a drug...

...because of insufficient urine output, causing volume overload, or because of large falls in glomerular filtration rate causing uraemia, hyperkalaemia, and acidaemia. An agent that did not affect urine output or...

...beneficial. However, in that population, which is likely to experience more subtle changes in glomerular filtration rate ...attempt to control the prescription of other drugs that may affect urine output or glomerular filtration rate, such as loop diuretics or vasoactive drugs, because we wished to test the effect...

...L, McNay J, Tuttle E. Effects of dopamine in man: augmentation of sodium excretion, glomerular filtration rate and renal plasma flow. J Clin Invest 1964; 43: 1116-24.
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...Res 1992; 53: 317-20.
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9/3,K/52 (Item 12 from file: 149) Links

01843557 Supplier Number: 54912768 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Perioperative Management of Burn Patients.

ROSE, DAVID D.; JORDAN, ELISABETH B.
AORN Journal , 69 , 6 , 1211
June ,
1999
Publication Format: Magazine/Journal
ISSN: 0001-2092
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional; Trade
Word Count: 6599 Line Count: 00623
Author Abstract: ...1988 because of significant changes in the management of life-threatening injuries. Advances include rapid removal of eschar, skin grafting, and early enteral feeding. Pathophysiologic changes occur in every major organ...

...same year, changes were made in the treatment of significant burn injuries that included rapid removal of the eschar down to the fascia within seven days postinjury; sequential meshed autografting with...

...in hypoproteinemia and is accompanied by activation of the immune system, which leads to white blood cell aggregation and deposition of the white blood cells in the fragile vasculature of the lung. The release of proteolytic enzymes and oxygen...

...pulmonary compliance increases the work of breathing or hypoxemia develops, as evidenced by worsening arterial blood gas measurements. Intubation is mandatory in patients with suspected inhalation injury (Table 1) because edema...

...patient is too critical to transport to the OR. Other techniques to improve oxygenation and remove carbon dioxide have been used (ie, extracorporeal membrane oxygenator and the use of the prone position) with mixed results.(10)

CARDIOVASCULAR PATHOPHYSIOLOGY

Deficits in blood volume are due to transvascular migration of fluids, electrolytes, and protein caused by the burn...GFR may inhibit the excretion of toxins and excess fluids and not preserve renal function. Blood products also may be required to correct any hematological changes.

The initial destruction and injury to tissue caused by burns and frank blood loss are responsible for a decrease in red cell mass. Heat from thermal burns causes the destruction of nearly 20% of a patient's red blood cells. Other causes of anemia that persist until the wounds can be closed are debridements, removal of damaged red blood cells by the reticuloendothelial system, and suppression of the formation and development of blood cells in bone marrow.(21) Deficits in plasma volume that are proportionally larger than the... hemorrhage. A pathophysiologic characteristic of Curling's ulcers is hypotension from shock, which decreases the blood supply to the gastric mucosa and leads to ischemia.

Stress ulcers increase in occurrence in...

...failure. Burns to the extremities that are deep and involve muscle may require amputation to remove the source of myoglobin excretion.

Renal perfusion is essential to prevent kidney failure. Ensuring adequate hydration during the resuscitation...

...and their location, overall status of the burns, previous surgeries, isolation code, and availability of blood. The perioperative nurse discusses patient information with the anesthesia care provider and calls the blood bank to ensure packed red blood cells are ready, if needed. The OR is then prepared for the patient.

The nurse...cooling. The hypothermia that results potentially can cause a coagulopathy that significantly adds to perioperative blood loss and abnormal enzymatic action that can affect homeostasis at the cellular level.

Airway management...

...also must be protected against dislodgement during transport and positioning.

Venous access. The potential for blood loss is significant with burn patients; therefore, adequate vascular access is vital. Venous access can...

...of the surgeons, absorbent pads are placed under the patient's extremities, and dressings are removed. After the patient is positioned for surgery, the nurse uses a warm chlorhexidine gluconate prep ...

...3) using a rapid infusor system (Figure 4). This technique is very successful at decreasing blood loss during skin harvesting. In addition, laparotomy sponges are soaked in a solution of 30...

...hemostasis throughout the procedure. Elastic bandages are used to wrap areas of debridement to reduce blood loss. Tourniquets frequently

are used to reduce blood loss during debridement. Excision of the eschar (ie, burned tissue) is accomplished by either surgical...

...The excision continues through all the skin layers to the fascia. Tangential excision causes more blood loss due to the uneven excision of the eschar with a debridement knife. With deeper...

...fingers, toes, hands, and feet to debride burned tissue. A Watson knife is used to remove eschar from large body surface areas, and a dermatome (Figure 6) may be used on large areas for rapid removal of eschar.

(Figures 5 and 6 ILLUSTRATION OMITTED)

Skin grafting. An autograft (ie, patient's...return to the burn unit, which can include pulmonary toilet and ventilator management, hemodynamic monitoring, blood count and coagulations studies, and temperature stabilization. Dressings are changed daily, and the grafts are...

...9). If the graft sites are not viable or are becoming infected, they must be removed or serious infection will occur. Patient care continues until the patient are stable and the...

...that must be met aggressively to ensure an optimal outcome. Early resuscitative treatment and a clear understanding of the pathophysiologic changes that occur in burn patients provide the victims an important...397.

(20.) D C Gore, J M Dalton, T W Gehr, "Colloid infusions reduce glomerular filtration in resuscitated burn victims," Journal of Trauma 40 (March 1996) 356-360.

(21.) D N...b. second-degree burn.
c. third-degree burn.
d. fourth-degree burn.

6. Deficits in blood volume, caused by the burn injury are due to transvascular migration of
1. electrolytes.
2...

...Heat generated from thermal burns causes the destruction of approximately -- of a patient's red blood cells.
a. 10%
b. 15%
c. 20%
d. 25%

10. The following statements are true...

...sodium

19. Elastic bandages are often used to wrap debridement areas to reduce -- loss.
a. blood
b. tissue
c. temperature
d. fluid

20. This form of skin grafting heals more quickly...

...a. create a moist environment for grafting.
b. increase sensation to the area.
c. decrease blood loss during skin harvesting.
d. none of the above

26. Loss of the airway in knowledge of the subject matter?
(5) Was the content clear and organized?
(6) did this article facilitate learning?
(7) Were your individual objectives met?
(8...

9/3,K/53 (Item 13 from file: 149) Links
TGG Health&Wellness DB(SM)

01724236 Supplier Number: 19934595 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Drug-induced acute renal failures: recognizing and treating prerenal, postrenal, and pseudorenal injury. (includes case studies)

Frazee, Lawrence A.; Rutecki, Gregory W.; Whittier, Frederick C.
Consultant , v37 , n5 , p1265(8)
May ,
1997
Publication Format: Magazine/Journal; Refereed
ISSN: 0010-7069
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 3756 Line Count: 00353

...4% of total body mass, it receives 20% to 25% of the cardiac output. Renal blood flow is precisely regulated by responsive vascular smooth muscle in afferent and efferent glomerular vessels...

...these regulators could lead to a change in renal perfusion, intraglomerular pressure, and ultimately glomerular filtration.
ACE inhibitor-induced prerenal insufficiency. One very commonly prescribed class of medications - angiotensin-converting enzyme...

...can reduce intraglomerular pressure; under normal physiologic conditions, this does not substantially decrease the glomerular filtration rate (GFR), but it may protect glomeruli from hydraulic or hyperfiltration injury. Such injuries result...

...renin and angiotensin II levels. This increase in vasoconstrictors compensates for circulatory inadequacy by raising blood pressure, while GFR is maintained by efferent arteriolar constriction.
Since ACE inhibitors decrease angiotensin II...

...The decreased renal perfusion in these states increases renin synthesis and release, which ultimately supports blood pressure and circulation through the generation of angiotensin II. The rise in angiotensin II levels...

...in the face of hypoperfusion. The inhibition of angiotensin I to II conversion may lower blood pressure and precipitously decrease the GFR.
Correcting volume or improving the ineffective circulation (eg, by...

...through their action on cyclooxygenase, they block the afferent arteriolar compensatory mechanism for decreased renal blood flow (dilatation in response to decreased blood pressure or perfusion), resulting in afferent arteriolar constriction. Whereas ACE inhibitors may dilate the efferent...contraction are in a high renin-angiotensin II state. The kidney maintains its perfusion and filtration despite angiotensin II-induced vasoconstriction by compensating with vasodilatory prostaglandins. NSAIDs inhibit prostaglandin synthesis and thus may provoke a precipitous decline in both renal blood flow and GFR. This effect

is reversible with discontinuation of the medication, as well as...

...associated with drug-induced rhabdomyolysis, which can result in ARF secondary to intratubular precipitation of myoglobin. Since the concomitant use of erythromycin, cyclosporine, gemfibrozil, or niacin and an HMG-CoA reductase...

...the urine should be implemented.
PSEUDORENAL FAILURE
Finally, remember that drugs may produce elevations in blood urea nitrogen (BUN) or creatinine levels that do not indicate a real change in renal...
...secretion of creatinine can cause an elevation in SCr levels without a change in glomerular filtration. Cimetidine is an organic base known to interact with creatinine in this way. Because of...

...concentrations. However, as renal function declines, secretion of creatinine becomes a larger component of creatinine clearance. The result is a more profound effect on SCr concentrations in patients with borderline renal...course had been complicated by diabetic retinopathy (treated by laser), microalbuminuria, a peripheral neuropathy. Her blood pressure had been reasonably controlled (130 to 140/85 to 95 mm Hg) with a...

...channel blocker (sustain-release diltiazem, 180 mg/d).
Physical examination. On admission, the patient's blood pressure was 160/90 mm Hg, pulse was 106 beats per minute and regular, and ...

...data. The patient's glucose level was 220 mg/dL with normal serum electrolytes. Her blood urea nitrogen (BUN) level was 36 mg/dL; creatinine concentration was 1.3 mg/dL; hemoglobin value and white blood cells and platelet counts were normal. Urinalysis showed 2+ glucose and trace protein on dipstick...

...and a long smoking history presented with refractory hypertension. Two months before this visit, his blood pressure had been 180/115 mm Hg, and despite titration of a three-drug regimen...

...mg/d, sustained-release diltiazem, 90 mg twice daily, and terazosin, 10 mg/d), his blood pressure remained at 162/102 mm Hg.
Physical examination and laboratory data. Pertinent findings included ...

...and decreased peripheral pulses with the absence of dorsalis pedis and posterior tibial pulses. The blood urea nitrogen (BUN) level was 18 mg/dL, and the creatinine concentration was 1.8...days. She had used NSAIDs regularly to combat arthritic pain.
Physical examination. The patient's blood pressure was 170/90 mm Hg; her pulse was 110 beats per minute and regular...

...g/dL. She complained of joint pains, and NSAID therapy was restarted. On admission, her blood urea nitrogen and creatinine levels were 28 mg/dL and 1.7 mg/dL, respectively...

...oliguric over the next 48 hours, and her creatinine level approximately doubled.
Discussion. This patient clearly demonstrates the typical risk factors for NSAID-induced renal insufficiency; advanced age, recent hospitalization, CHF...,

9/3,K/54 (Item 14 from file: 149) Links

01609690 Supplier Number: 17920958 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Acute renal failure.(Review article)

Brady, Hugh R.; Singer, Gary G.
The Lancet , v346 , n8989 , p1533(8)
Dec 9 ,
1995
Publication Format: Magazine/Journal
ISSN: 0099-5355
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 6438 Line Count: 00565

Abstract: Acute renal failure (ARF), or sudden kidney failure, results in poor filtration of the blood, the build-up of fluid and waste products in the body, and chemical imbalance. There... ...different causes and treatments. The most common form of ARF, prerenal azotemia, results from poor blood circulation in the kidney, and is often successfully treated with fluid replacement. The second and... ...form of ARF, intrinsic renal azotemia (ATN), can be caused by poor circulation due to blood vessel disease or poisoning of kidney cells. ATN may be prevented by closely monitoring circulation...

Acute renal failure (ARF) is a common clinical syndrome characterised by rapid decline in glomerular filtration, perturbation of extracellular fluid volume, electrolyte and acid-base homoeostasis, and retention of nitrogenous waste...

...care, is typically asymptomatic, and usually diagnosed when routine tests reveal an acute rise in blood urea and creatinine. Oliguria (<400 mL per day) occurs in about half the cases. ARF...

...of manifestations of renal hypoperfusion and can complicate any disease that reduces the "effective arterial blood volume" (eg, cardiac failure, severe systemic vasodilation, hypovolaemia). True or "effective" hypovolaemia is detected by...

...and release of vasopressin. Noradrenaline, angiotensin II, and vasopressin attempt to restore the effective arterial blood volume and protect cardiac and cerebral perfusion by stimulation of vasoconstriction in musculocutaneous and splanchnic...

...and salt apetite, and promotion of renal salt and water retention. Renal perfusion and glomerular filtration are maintained during mild hypoperfusion by compensatory mechanisms, including afferent arteriolar vasodilation triggered by a...
...possibly nitric oxide, and selective efferent arteriolar vasoconstriction induced by angiotensin II. Autoregulation of renal blood flow and glomerular filtration rate (GFR) is overwhelmed at mean arterial blood pressures below 60-80 mm Hg and ARF ensues. GFR may be impaired at lesser...

...high levels of angiotensin II help to maintain GFR distal to stenoses by increasing systemic blood pressure (via action on vascular smooth muscle) and intraglomerular pressure via selective action on efferent... parenchymal cells, particularly tubule epithelium, and ARF does not resolve immediately after restoration of renal blood flow. Extreme ischaemia can induce bilateral renal cortical necrosis and irreversible renal failure. The course...

...initiation phase (hours to days), ischaemic injury is evolving. GFR

falls because of impaired renal blood flow and glomerular ultrafiltration pressure, disrupted integrity of tubule epithelium with backleak of glomerular,.filtrate...

...arrangement of the medullary vasculature. Importantly, renal injury can be limited by restoration of renal blood flow during this period. Next comes the maintenance phase (typically 1-2 weeks) during which...

...vasoactive mediators from injured endothelial cells (eg, decreased nitric oxide, increased endothelin), congestion of medullary blood vessels, and reperfusion injury induced by reactive oxygen species and other mediators derived from leucocytes...

...poisons, and to some endogenous compounds if present in the circulation at high concentrations (eg, myoglobin, haemoglobin, uric acid, paraproteins). The kidney is especially vulnerable to nephrotoxic injury because of its rich blood supply and capacity to concentrate toxins within tubule epithelial cells and the interstitium via the...

...less than 5% of cases of ARB (table 1). Again, because one kidney has sufficient clearance to maintain creatinine balance, a rise in serum creatinine because of obstruction implies blockade of...

...Management of prerenal azotaomia

Prerenal azotaemia is, by definition, rapidly reversible after restoration of renal blood flow and glomerular ultrafiltration pressure. Therapy is directed at the cause of hypoperfusion. The composition...

...source of fluid loss. Hypovolaemia due to severe haemorrhage is usually corrected with packed red blood cells, whereas isotonic saline is more appropriate for plasma losses. Urine and gastrointestinal fluids vary ...

...administered intravenously over 30 min, guided subsequently by clinical variables, such as jugular venous pressure, blood pressure, heart rate, and bodyweight. Invasive haemodynamic monitoring may be necessary in complex cases, if...in patients with ischaemic and nephrotoxic ATN (table 2). These include manoeuvres to augment renal blood flow (eg, low-dose dopamine, atrial natriuretic peptide, prostaglandins), increase urine flow and relieve tubule...bacterial-derived products, such as aromatic amines and skatoles, and other molecules that are inadequately cleared from the circulation. The onset of the uraemic syndrome is ominous and mandates emergency dialysis...or acidosis that is refractory to medical therapy. Many nephrologists also initiate dialysis empirically if blood urea rises above 100 mg/dL (about 35 mmol/L), even in the absence of...

...outcome have not been confirmed in later trials.[1-3,40-42] Nor is it clear whether increasing the intensity of dialysis to maintain blood urea and creatinine below a certain level favourably affects outcome.[42,44] The issues of...

...and renal hypoperfusion. Furthermore, some activation of complement and circulating leucocytes almost invariably occurs when blood is exposed to conventional cupraphane or cellulosic dialysis membranes, mediators that may then a gravate...

...peritoneal dialysis is not possible. CAVH requires arterial and venous access and the patients's blood pressure generates an ultrafiltrate of plasma across a porous and biocompatible dialysis membrane. A physiological...

...peritoneal dialysis fluid, is passed along the other side of the membrane to achieve diffusive clearance. CVVH requires only a

double-lumen venous catheter; however, a blood pump is needed to generate ultrafiltration pressure across the dialysis membrane. These new haemodialysis techniques...

...techniques require immobilisation in bed, systemic anticoagulation, arterial cannulation in CAVH, and prolonged exposure of blood to synthetic, albeit biocompatible, dialysis membranes.
Although most patients recover from ARF, a few (< 5...

...by percutaneous catheterisation of the dilated ureteric pelvis or ureter, and obstructing lesions are often removed percutaneously (eg, calculus, sloughed papilla) or bypassed by insertion of a ureteric stent (eg, carcinoma...

...develop a transient salt-wasting syndrome that may require administration of intravenous fluids to maintain blood pressure and glomerular filtration rate.
Outcome and the future
The mortality rate from ATN is around 50% and has...

...retained urea and other waste products, and delayed recovery of tubule function relative to glomerular filtration. 50% of survivors have subclinical abnormalities of renal function or structure. Patients should be observed...

...during this period which may retard renal recovery or even trigger a secondary rise in blood urea and creatinine. ARF is irreversible in about 5% of patients, probably because of complete...

9/3,K/55 (Item 15 from file: 149) Links

01609089 Supplier Number: 17928678 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Severe rhabdomyolysis mimicking transverse myelitis in a heroin addict.(Selected Proceedings of the 5th World Congress for the World Federation of Associations of Clinical Toxicology Centers and Poison Control Centers, November 8-11, 1994, Taipei, Taiwan, R.O.C.)

Chen-Chang Yang; Guang-Yang Yang; Jiin Ger; Wei-Jen Tsai; Jou-Fang Deng
Journal of Toxicology: Clinical Toxicology , v33 , n6 , p591(5)
Nov ,
1995
Publication Format: Magazine/Journal
ISSN: 0731-3810
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 2809 Line Count: 00244

...next morning. On arrival in the ED, he appeared awake and followed verbal commands. His blood pressure was 116/68 mm Hg, pulse 85 bpm, respirations 18/min and body temperature...

...pin-prick response was intact. Extensor plantar response of both legs were absent as well. Blood gas analysis showed pH 7.326, P02 102.9 mm Hg, [PCO.sub.2] 29.9 mm Hg, [HCO.sub.3] 15.6 mmol/L on room air. Complete blood cell count revealed leucocytosis with a WBC 20000/[mm.sup.3]; hemoglobin 17.8 gm...brain injury is generally considered the diagnostic criterion for rhabdomyolysis (17). Elevation of the serum myoglobin concentration or the presence of myoglobinuria also indicate muscle injury, and these have been used as diagnostic criteria by some authors. In view of the rapid clearance of serum

myoglobin and poor correlation of myoglobinuria with myoglobinemia, these tests are less reliable in the diagnosis...

...recognized complication (24). Commonly proposed mechanisms of renal injury are direct nephrotoxicity of components of myoglobin (ferrihemate), alterations of renal blood flow, and tubular obstruction secondary to precipitation of myoglobin, protein and uric acid crystals (17,18). Urine pH has been found to influence the formation of acute renal failure. At or below pH 5.6, myoglobin dissociates into ferrihemate and globin. Ferrihemate is known to exhaust energy metabolism in the kidneys...
...nonoliguric renal failure. The direct release of potassium from damaged muscles, the fall in glomerular filtration rate that accompanies dehydration and third space fluid loss in damaged muscle compartments, and acute...

9/3,K/56 (Item 16 from file: 149) Links
TGG Health&Wellness DB(SM)

01601444 Supplier Number: 17281983 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Acute exertional rhabdomyolysis.

Line, Robin L.; Rust, George S.
American Family Physician , v52 , n2 , p502(5)
August ,
1995
Publication Format: Magazine/Journal
ISSN: 0002-838X
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 2185 Line Count: 00199
Author Abstract: ...exertional rhabdomyolysis is caused by a skeletal muscle injury that results in the release of myoglobin and other cellular contents into the circulatory system. Recent reports suggest that acute exertional rhabdomyolysis...

Text:

...clinical illness caused by an injury to skeletal muscle that results in the release of myoglobin and other cellular contents, including creatine kinase (CK-MM fraction) and aldolase, into the circulatory...

...is characterized by dark color of urine, heme-positive dipstick and the absence of red blood cells under microscopic examination. Levels of CK-MM isoenzyme are often markedly elevated (600 U...

...normal results, with the exception of 3+ positive heme, and results were negative for red blood cells under microscopic examination. The CK level was 13,758 IU per L with an...

...when the integrity of the skeletal muscle membrane is violated, causing CK-MM, aldolase and myoglobin to leak into the circulation at the time of injury. The CK level is the...

...early in the course of the illness, the CK level may be only modestly elevated. Filtration and excretion of myoglobin in the kidney results in myoglobinuria.(10) In the clinical setting, such a patient would present with a positive urine dipstick test for heme pigment but with no red blood cells on microscopic examination of the urine.(6) Also, CK level would be abnormally elevated...

...a 1+ or 2+ reaction for protein would be noted on urinary dipstick testing. Serum myoglobin levels are not an accurate indicator of ...of leakage from the injured muscle, which then precipitates as calcium phosphate in soft tissue, blood vessels and the eyes. Hypoalbuminemia is the result of massive capillary destruction with consequent leakage...

...failure appears to result from a combination of hypovolemia, hypoxia, lactic acidosis and sludging of myoglobin in the renal tubule.
Some degree of disseminated intravascular coagulation will occur in virtually every...

...10 L of normal saline in the first 24 hours to maintain circulation and stabilize blood pressure. At the same time, the clinician should be alert for the development of compartmental...

...25 percent solution intravenously over 15 minutes. Both mannitol and furosemide dilute the concentration of myoglobin and have clinically been shown to reduce nephrotoxicity.(2) Continued monitoring of laboratory values (i.e., blood urea nitrogen, creatinine, electrolytes, [Ca.sup.++], phosphate and CK) is critical.
Alkalinization of the urine...

...Alkalinization lowers the elevated potassium level and protects the kidney from the nephrotoxic effects of myoglobin and uric acid.(11) However, hypocalcemia is likely to be aggravated by the large amounts...

...and rest periods spaced to enhance glycogen repletion, and (3) adequate hydration to promote renal clearance of myoglobin.(4) Also, patients should be encouraged to limit activity during periods of higher-than-average...
...435-43.
(4.)Olerud JE, Homer LD, Carroll HW. Incidence of acute exertional rhabdomyolysis. Serum myoglobin and enzyme levels as indicators of muscle injury. Arch Intern Med 1976; 136:692-7...

9/3,K/57 (Item 17 from file: 149) Links
TGG Health&Wellness DB(SM)

01424425 Supplier Number: 14347053 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Rapid, accurate urine testing at the bedside. (includes related article) (Reagent Testing, part 1)

Zaloga, Gary P.
Consultant , v33 , n6 , p90(7)
June ,
1993
Publication Format: Magazine/Journal
ISSN: 0010-7069
Language: English
Record Type: Fulltext; Abstract Target Audience: Professional
Word Count: 4259 Line Count: 00359

...be reviewed. In subsequent issues of CONSULTANT, the focus will be on analysis of gastrointestinal, blood, cerebrospinal fluid, and bacterial culture specimens.
HOW REAGENT TESTS WORK--AND HOW WELL
Bedside reagent...

...colleagues and I have conducted studies to compare the accuracy of

routine bedside testing of blood glucose and urine values with results obtained from the central laboratory. We found the results to be highly correlated.|7

We have also compared results of laboratory blood gas and electrolyte determinations obtained at the bedside by health care providers to results obtained...

...testing results.

Urine dipstick testing is available for measuring pH, specific gravity, protein, glucose, hemoglobin (blood), bilirubin, urobilinogen, ketones, ascorbic acid, nitrite, and leukocyte esterase. Results may be obtained by directly...

...become acidic if infecting or contaminating organisms metabolize the glucose.

If excess urine is not removed from the strips after they are dipped, the acid buffer from the protein reagent on...positive reactions may be found during therapy with phenazopyridine hydrochloride or infusions of polyvinylpyrrolidone (a blood substitute), with highly alkaline urines (pH above 9), and in the presence of ammonium or...

...glucose vary widely.|10,11

In addition, urinary glucose levels depend on urine flow (glomerular filtration rate |GFR

). The lower the GFR, the more time for glucose reabsorption, and the higher...1), test results may be misleading.

Indirect indices of ketonemia, such as anion gap and blood pH measurements, are useful in this situation, provided that other causes of large anion gap...

...patients who are starving. Thus, a positive urine test requires measurement of serum ketones and blood pH to confirm ketoacidosis.

Urinary hemoglobin

Urine dipstick test can detect hemoglobin, myoglobin, or red blood cells in the urine. The chemical detection of blood is based on the pseudoperoxidase action of erythrocytes and hemoglobin.|20,21

The dipstick contains organic peroxide, which reacts with hemoglobin and myoglobin to catalyze the oxidation of the indicator.

Intact erythrocytes will hemolyze on the test paper...

...erythrocytes. A uniform color is indicative of the presence of free hemoglobin, hemolyzed erythrocytes, or myoglobin.

A few erythrocytes (but no more than 5/|micro

L) are normally found in urine...

...activity associated with a urinary tract infection or bacterial overgrowth. These urine dipstick tests for blood are highly sensitive and useful for screening urine for the presence of erythrocytes or hemoglobin...

...a microscopic examination of the urine. When the dipstick reaction is positive but no red blood cells are evident on microscopic examination of the urine, suspect hemoglobinuria or myoglobinuria.

Urinary nitrite...

...of the test. False-positive readings may occur with pigmented urine.

Urinary leukocyte esterase

White blood cells may be detected in the urine by the actions of enzymes (esterases) liberated from...

...on the strips to produce a purple color. These strips indicate the presence of white blood cells in the urine and are able to detect pyuria. With normal urine, no color...than 25 to 50 mg/dL interfere with

urine dipstick tests for detecting glucose, bilirubin, blood, and nitrite.

REFERENCES:

1. Chernow B, ed. Bedside diagnostic testing. Chest 1990;97(suppl):183
...

...Med. 1987;15:379-382.

8. Zaloga GP, Hill TR, Strickland RA, et al. Bedside blood gas and electrolyte monitoring in critically ill patients. Crit Care Med. 1989;17:920-925.

9. Zaloga GP, Dudas L, Roberts P, et al. Near-patient blood gas and electrolyte analyses are accurate when performed by non-lab trained individuals. J Clin...

...minimal laboratory training, with those of trained laboratory technicians.|7

We compared results of bedside blood glucose dipstick measurements (using Chemstrip bG, Bio-Dynamics Division, Boehringer Mannheim Diagnostics) and laboratory measurement...

9/3,K/58 (Item 18 from file: 149) Links
TGG Health&Wellness DB(SM)

01213174 Supplier Number: 09406501
Occult ischaemic necrosis of skeletal muscle associated with renal failure.

Coakley, J.H.; Edwards, R.H.T.; McClelland, P.; Bone, J.M.; Helliwell, T.R.
British Medical Journal , v301 , n6748 , p370(1)
August 18 ,
1990
Publication Format: Magazine/Journal
ISSN: 0959-8146
Language: English
Record Type: Abstract Target Audience: Professional

Abstract: Kidney failure may be associated with myoglobinuria, the presence of the muscle protein myoglobin in the urine, which results from muscle damage. Structural and chemical evidence of muscle damage... ...in two cases. Two of the patients recovered normal kidney function after hemodialysis treatment (artificial filtration of the blood to remove wastes). A third patient died of bronchopneumonia, a lung infection, and persistent kidney failure. In... ...caused kidney failure. It is possible that the affected muscles were ischemic, or lacked sufficient blood supply, and reperfusion or restoration of blood flow to the ischemic muscle led to the release of the muscle protein myoglobin. The accumulation of myoglobin in the kidney may block the filtering tubules and lead to kidney failure. These findings...

9/3,K/59 (Item 19 from file: 149) Links
TGG Health&Wellness DB(SM)

01194384 Supplier Number: 08263515 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Tips on technology. (blood bank, chemistry, hematology, immunology, microbiology)(Clinical Laboratory Reference 1989)

Medical Laboratory Observer , v21 , n13 , p123(25)
Annual ,
1989
Publication Format: Magazine/Journal
ISSN: 0580-7247
Language: English
Record Type: Fulltext Target Audience: Academic; Professional
Word Count: 15323 Line Count: 01252

Tips on technology. (blood bank, chemistry, hematology, immunology, microbiology)(Clinical Laboratory Reference 1989)

...disciplines, and this cross-referenced index will quickly lead you to any topic you want.

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BLOOD BANK

LAB COATS AND AIDS

We have a laboratory staff of about 370, with many bleach at a suitable concentration should be used. Laboratory coats visibly soiled with blood or body fluids should be soaked in household bleach (1:10) for 20 minutes before...

...part of our quality assurance efforts, we have been tracking the number of re-collected blood specimens. We have not found any references concerning what would be an acceptable level of...

...advice?
I too was unable to find any reference concerning an acceptable level of repeated blood collections. This seems like a very useful figure that could and should be used in...

...accidental percutaneous inoculation--most often, needlestick by a needle contaminated with an AIDS patient's blood.(1)
In light of this, the risk to personnel giving allergy shots would vary directly...

...at risk reduction logically must be primarily aimed at minimizing the potential for needlestick accidents. Clearly gloves will not contribute to protection against needlesticks.
Although the quantity of blood contaminating a needle following intramuscular injections may be less than that following intravenous procedures, some...At the end of transfusion, the red cells have been added to the patient's blood stream with a variable amount of fluids and/or plasma. Depending on the relative volumes...

...size, and a number of other factors.
Table 15-2 in the American Association of Blood Banks' Technical Manual(1) shows an adult patient's hemoglobin response after the transfusion of a unit of whole blood or a unit of red cells. With a pretransfusion level of 8 gm/dl, a...

...level of 8.4 gm/dl soon after the transfusion of one unit of whole blood, compared with 8.7 gm/dl achieved with red cells. After 24 hours, the patient...

...be informative. The results will depend on the patient and also on the amount of blood given, but the two-hour period would seem to be acceptable as long as one...

...amount of time that one should wait.
(1)Technical Manual of the American Association of Blood Banks, 9th ed., p. 266. Arlington, Va., AABB, 1985.
ANTICOAGULANTS AND AIDS VIRUS
Have any...
...fluoride, oxylate, etc.) on the AIDS virus's viability? Is there any possibility of a blood additive being synthesized that would kill the virus yet not affect our lab values?
To...

...effect on HIV or HBV.
Although almost anything is possible, the likelihood of developing a blood additive that would kill the HIV and HBV and have no effect on laboratory examination of the blood seems small. Anticoagulants in common laboratory use, such as EDTA, fluoride, citrate, oxylate, and heparin, all have adverse effects on blood from the standpoint of laboratory assays. Although many measurable parameters of the blood are adversely affected, the degree of alteration produced varies considerably among the anticoagulants, such that...

...EDTA, etc.
Thus by judicious use of several agents, we can keep anticoagulant alteration of blood values to a minimum. It is difficult to conceive of a virus-inactivating additive to blood that would not react with at least some components of blood and therefore alter it in some way.
TIGER-STRIPE TUBE IN BLOOD BANKING
We have a few technologists who draw blood bank specimens using the yellow tiger-stripe tube with thrombin. I have heard that we...

...introduces another source of possible error.

The Technical Manual(1) of the American Association of Blood Banks states that it is permissible to use either serum or plasma for pretransfusion testing since the same antibodies are present in both. It also states that most blood bank technologists prefer serum because plasma may occasionally give small fibrin clots that can be...

...in all probability will not cause any difficulty, but it is easier to allow the blood specimen to clot and use this for testing.

(1)Technical Manual of the American Association of Blood Banks, 9th ed., p. 196. Arlington, Va., AABB, 1985.

BLOOD VOLUME IN A CHILD

Because we are the largest hospital in the state, many infants and children are referred to us from health centers. Sometimes this requires that blood be drawn from these young patients more than once in the same day. We are unable to know the amount of blood previously drawn. The only control we have is how much we draw. We use the...

...this and the parents are asked to bring the child back to have the remaining blood work drawn. How soon should a child return to complete the blood work? What do you consider to be a safe amount to draw on a child...

...possible to change the health centers' procedures so they do keep track of how much blood has been drawn on the infants and children and report it to you? Second, is...

...pounds? Last, I make an assumption that the young patient is sent home after the blood is drawn and brought back again for another phlebotomy.

I checked with several of our pediatricians on this question. An infant's blood volume is 80-90 milliters per kilogram, therefore even a full-term infant ([is greater than] 3 kg) has at least a 240 ml blood volume. A single venipuncture removing in milliliters half of the baby's weight in pounds would be very conservative (3 ml). In a full-term non-anemic infant, 5-6 ml of blood can easily be drawn without a reaction. A six-month-old of 6 kilograms can easily have 7-10 ml removed, and at one year of age, at least 9-10 ml. Ten to 15 ml can be removed without harm from the one-year-old if the child is non-anemic (meaning a...

...keep close track of the child's hemoglobin or hematocrit. At the time of drawing blood, even as much as 500 cc in an adult, the hemoglobin and hematocrit do not...

...will show if the child is chronically anemic. If the child is, then probably less blood should be drawn. If not, the amounts given above should be safe.

BLOOD DRAWING IN THE NEONATE

We recently hired a phlebotomist from a hospital with a large neonatal nursery. He explained a procedure for drawing venous blood from neonates that involves sticking a hand vein with the tip of a needle. There is no syringe or Vacutainer attached to the needle, and venous blood drips into a collecting tube (i.e., Microtainer tube). Are you familiar with this technique...

...for venous occlusion, the tip of the needle is placed in a distended vein, and blood is allowed to drip into an appropriately sized tube. It is important to insert the...media have on CBC and general chemistry tests? I know of a lab that draws blood immediately after injection of 100 cc of Renografin using the same needle in the same vein before withdrawal to obtain their blood for studies.

Renografin is one of several materials used in x-ray studies of the

...

...in urine. I have been unable to find documentation of other artifactual effects in the blood of patients who have been given these materials.

In many x-ray departments, these and...the study. There is a temptation to use this indwelling intravenous line for collection of

blood specimens following injection of the contrast media. Consequently, there is a high risk that the...
...contaminated with high concentrations of contrast media.

We have shown that approximately 10 ml of blood must be withdrawn from an indwelling intravenous catheter in order to minimize contamination. While it...

...to quickly obtain a specimen through the catheter. Under these circumstances, approximately 10 ml of blood should be withdrawn and discarded prior to obtaining the specimen for analysis.

CK VALUES IN...

...group undergoing diagnostic coronary angiography for stable angina. In this study, the authors drew blood specimens before and at two-hour intervals for the first 12 hours and then at six...

...of myocardial infarction. (1)Pauletto, P.; Piccolo, D.; Scannapieco, G.; et al. Changes in myoglobin, creatine kinase, and creatine kinase-MB after percutaneous transluminal coronary angioplasty for stable angina pectoris. Am...

...Program report(1) of the expert panel on detection, evaluation, and treatment of high blood cholesterol in adults recommends using only total serum cholesterol for the initial screening of individuals. For...

...Education Program: Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. Arch. Intern. Med. 148:36-69, 1988. (...controls in duplicate, perform a manual white count, and correlate these counts with the blood film. Our quality control data as well as our College of American Pathologists' proficiency testing are...

...on interlaboratory surveys, I should think you can tell your physician users that your blood counts are indeed correct.

(1)Statland, B.E., and Winkel, P. Physiological variability of leukocytes in...M.H.; and Salzman, E.W. Do patients with thromboembolism disease have circulation aggregates? Blood 64: 205-209, 1984.

USE OF LEG FOR BLEEDING TIME

I have heard that one could...

...hours after aspirin administration. In performing the test on the leg, they applied a blood pressure cuff to the thigh, maintaining the pressure at 40 mm Hg, and then performed the...counts do fall after as little as one hour."(2)

So there is no clear-cut evidence that cell counts in body fluids other than CSF are stable for longer periods...

...Rheum. 29: 770-774, 1986.

SEQUENCE OF SPECIMEN DRAWING

In the NCCLS standard for blood collection,(1) the following order of draw of the vacuum tubes is recommended: 1) blood culture, 2) serum, 3) coagulation (citrate and heparin), 4) hematology (EDTA), and finally, 5) special tubes...

...draw?

The sequence of specimen drawing has been developed to optimize the quality of blood specimens. For instance, coagulation specimens are collected only after any tissue thromboplastin (which might have been...

...consideration.

(1)National Committee for Clinical Laboratory Standards. Procedures for the collection of diagnostic blood specimens by venipuncture. 2nd ed. Approved standard H3-A2. Villanova, Pa., NCCLS, 1984.

REACTIVE VS. ATYPICAL...

...are found, the senior morphologist or clinical pathologist/hematologist should more carefully evaluate the blood film and consult with the clinician to determine whether the picture is characteristic of a viral... the brain and the dura and is found within the ventricular system. Unlike the blood volume, which is very small compared with the adult, the volume of cerebrospinal fluid is closer...

...3 ml of fluid when performing a spinal tap. They do not feel that removal of this amount is detrimental to the baby.

VDRL PROFICIENCY TESTING

The proficiency testing program we...part of it.

COLD AGGLUTININS TEST

What is the current recommended procedure for collecting blood for a cold agglutinins test? One reference book states: "Specimens should be collected at 37 C...

...the special technical considerations for the cold agglutinins assay. The instructions are:

1. The blood should be collected into a warmed syringe or evacuated tube and immediately immersed in a 37 C water bath or thermos flask. If the blood cannot be collected at 37 C, then the specimen should be placed in a 37 C water bath or incubator as soon as possible. The dangers of letting the blood cool are that the auto-antibody will combine with the cells and cause agglutination, fixation of...

...cells. Therefore, the direct antiglobulin test should be carried out on a specimen of blood collected into EDTA, as this will prevent any complement being bound in vitro, even if cooling...

...this starting temperature, the specimens actually spin at 37 C. It is important to remove serum from the specimens immediately after centrifugation.

The routine use of prewarmed blood collection equipment and serum separation at 37 C is recommended for cryoglobulin assay specimen collection by...What do you recommend?

In any counting system, whether one is counting radioactivity or blood cells in an electronic blood cell counter, it is necessary to count a sufficient number of counts to minimize random error ...

...cent. The same theory of counting statistics dictates why we measure the quantity of blood we do for an electronic cell count and perform at least a 100-cell blood cell differential.

ANA TESTING

We perform antinuclear antibody testing using mouse kidney substate. We have competent...

...specific circumstances when culture could be useful, e.g., recurrence of infection after surgical removal, or failure of the initial infection to respond to surgical drainage (with or without empiric antibiotic...per gram of feces. Within this genus, members of the B. fragilis group are clearly the dominant species in feces. Thus routine screening for B. fragilis should yield virtually 100 per...

...of neutrophils and not bacteriuria. A positive LE test suggests the presence of white blood cells in higher than expected quantities, which in turn suggest bacteriuria.

These assays are often impregnated...

...consuming. It takes up to one hour to perform.

The last procedure is a filtration-staining method called the Bac-T-Screen (Vitek Systems, Hazelwood, Mo.). Although a rapid test, it... after overnight incubation. With these exceptions, I would agree with the conclusion you reached.

BLOOD CULTURES

Our laboratory currently uses the Bactec 460 for blood cultures. For patients receiving antibiotic therapy, we are drawing both the non-resin containing media 6B...

...we can see in inoculating both sets of bottles is the increased volume of blood obtained. What is your opinion?

I agree that the major advantage of inoculating both sets of bottles is the increased volume of blood cultured. This is an advantage that should not be underestimated, however. Volume of blood cultured is now clearly recognized as a major factor in determining the sensitivity of conventional blood culture systems to detect bacteremia,(1,2) and there is good evidence to suggest that this...

...must be considered, the authors of Cumitech 1A(4) state that "...10 ml of blood appears to be a reasonable lower limit per culture...." Thus, to reduce the number of bottles from four to two, one would either decrease the volume of blood cultured, or double the blood: medium ratio. Theoretically, the latter alternative is more apt to provide comparable results with the four-bottle draw.

When a blood culture study purporting to evaluate two or more media shows no significant difference in recovery of...

...and the total. This will give some indication of the effect of volume of blood cultured. For example, a study comparing medium X with medium Y (each with 5 ml of blood inoculated) might give the following results: total positives = 100, positives with medium X = 84, positives with...

...significant difference between the two media, but does show that culturing 5 ml of blood would miss 16 to 20 per cent of bacteremias detectable by culturing 10 ml of blood.

One other factor should also be considered. Studies examining the blood:medium ratios of blood cultures indicate no significant difference between a standard 1:10 ratio and a 1:5 ratio...

...5) In the latter instance, better results were obtained with greater dilution of the blood. I am not aware of studies that have looked at this factor for resin-containing media...

...Hall, M.M.; Ilstrup, D.M.; and Washington, J.A. Effect of volume of blood cultured on detection of bacteremia. J. Clin. Microbiol. 3:643-645, 1976. (2)Washington, J.A. Conventional approaches to blood culture, pp. 41-88, in "The Detection of Septicemia," Washington, J.A., ed. West Palm Beach...

...Davies, T.A.; Randall, E.L.; Whitaker, S.; and Waters, J.R. Effect of blood dilution on recovery of organisms from clinical blood cultures in medium containing sodium polyanethol sulfonate. J. Clin. Microbiol. 9:248-252, 1979. (4)Reller, L.B.; Murray, P.R.; and MacLowry, J.D. Cumitech 1A, "Blood Cultures II," Washington, J.A., coordinating ed. Washington, D.C., American Society for Microbiology, 1982.

(5...

...R.; Ilstrup, D.M.; and Washington, J.A. Comparison of recovery of organisms from blood cultures diluted 10% (volume/volume) and 20% (volume/volume). J. Clin. Microbiol. 15:860-864, 1982...

Descriptors:
...Blood banks

9/3,K/60 (Item 20 from file: 149) Links
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Glucose (HK)	Uric Acid
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Total Bilirubin	CK
LDH...	

...R] QA System

Complete system designed to provide an accurate reliable method of hospital bedside blood glucose testing and quality assurance. The system includes a blood glucose meter, permanently mounted on a portable workstation, and produces quality control reports when connected ...

...GLUCO System [TM] Printer

AMES GLUCOMETER [R] M DIABETES MANAGEMENT SYSTEM

The Ames GLUCOMETER M Blood Glucose Meter combined with the GLUCOFACTS [TM] Data Management System provides health professionals and patients with an accurate and effective means of diabetes management.

GLUCOMETER [R] M BLOOD GLUCOSE METER The GLUCOMETER M features single button calibration, matching meter performance with each batch...and manipulation.

Patients have a convenient, easy to use and accurate way of testing

their blood glucose levels and saving the results. The system also provides physicians and other healthcare professionals...

...more effective interaction between physician and patient in diabetes management. No. 5606--GLUCOMETER [R] M Blood Glucose Meter No. 5615--GLUCOFACTS [TM] Data Management System No. 5616--GLUCOFACTS [TM] Data Printer
GLUCOMETER [R] II BLOOD GLUCOSE METER WITH MEMORY The GLUCOMETER II Blood Glucose Meter with Memory provides a quantitative determination of blood glucose using GLUCOSTIX [R] Reagent Strips.
The Memory capability makes blood glucose monitoring a more flexible part of the patient's lifestyle, as it: * Stores up to 26 test results so the patient
can keep track of blood glucose levels ON
THE GO, and transfer data to a diary when
it's more...

...in
Memory so the patient can more easily keep
track of progress in maintaining
appropriate blood glucose levels. * Keeps data in Memory for the life of the
battery - approximately one thousand...

...in public. * Testing range 25 mg/dL to 399 mg/dL. No. 5625--GLUCOMETER II Blood Glucose Meter with Memory
AUTOLET [R]
The pocket/purse-size AUTOLET is a spring-activated...

...to use as an easy and comfortable method of obtaining the ideal amount of capillary blood for testing.
No. 2790--AUTOLET [R] Kit; Includes: 1 plastic wallet, 1 AUTOLET [R], 10...

...Lancing Device shaped like a pen, the GLUCOLET is small and quiet, enabling comfortable, unobtrusive blood sampling for diabetics.
No. 5702--GLUCOLET Automatic Lancing Device; Includes: 1 GLUCOLET, 10 UNILET [R...
...HOSPITAL WORKSTATION provides the healthcare professional with an organized and easy to use system for blood glucose monitoring. The workstation keeps all essential supplies together for convenient transport to the patient...

...plastic strip with an impregnated paper are that provides two reagent areas for determination of blood glucose levels with the use of one drop of fingertip or venous blood. Glucostix is a convenient no wash test which can be read semiquantitatively against a comparison color chart on the bottle label or quantitatively in 50 seconds with the Glucometer II Blood Glucose Meter.
No. 2627--Glucostix Reagent Strips, bottles of 50.
No. 2628--Glucostix Reagent Strips...

...foiled strips
DIASTIX [R] Reagent Strips AND KETO-DIASTIX [R] Reagent Strips DIASTIX is a clear, flexible plastic strip with impregnated paper on one end for the 30-second determination of...

...disposable plastic strip with two reagent pads for determining the concentration of glucose in whole blood from either fingertip or venous sample. The lower range pad responds optimally to glucose concentrations...
...The original Ketone test. Reagent tablets can be used either with urine,

plasma, or whole blood. With urine specimen, results are obtained in 30 seconds. And with whole blood testing results are available in ten minutes and with serum or plasma in two minutes...

...place it in the instrument for analysis. Results for urine pH, protein, glucose, ketone, bilirubin, blood, nitrite, urobilinogen, leukocytes and specific gravity are recorded through a built-in tape printer. Many...

...Reagent Strips
Designed for testing of urine specimens for specific gravity, protein, glucose, ketone, bilirubin, blood, nitrite, urobilinogen, leukocytes and to indicate urinary pH. MULTISTIX [R] 10 SG provides significant information...800) 426-2042 For Immunochemicals
(800) 521-5548 Fax: (516) 222-0878
FULLY AUTOMATED PRETRANSFUSION BLOOD TESTING SYSTEM
Olympus PK7100 [TM] analyzes up to 240 samples/hour with full data processing...

...and easier to read agglutination/non-agglutination patterns. Additional advantages include simultaneous processing of routine blood tests, micro-syringes for precision dispensing of serum,
blood cells,
diluent and reagents, and rapid, contamination-free rinsing.
Computer system consists of main processor...
...per test; 12,000 reagent tests on-board capacity per carousel; specimen sampling from primary blood collection tubes. A true walk away system, REPLY'S versatility, flexibility and efficiency make it...

...commitment to immunology is broad in scope and significant in scale. With a definitive and clear focus on innovation, it includes quality in both products as well as in specific services...
NML Products 3
Bionetics, Murine Testing and 4
Food Industry Products
Dialysis, Plasmapheresis and 5
Blood Filtration Products To leave message
for Representative 6
Telesales 7
All other calls 8
Credit and...

...Bleeding Time Device SERUM PLASMA SEPARATOR COAGULATION REAGENTS AND CONTROLS FACTOR DEFICIENT PLASMAS CHROMOGENIC ASSAYS BLOOD GAS CONTROLS AND PROGRAMS
RADIOIMMUNOASSY PRODUCTS HCG IRMA Prolactin IRMA LH IRMA L.E.S...

...TOTAL T3 TOTAL DIGOXIN CORTISOL
PREGNANCY TESTS URINE PREGNANCY TESTS SERUM PREGNANCY TESTS
MICROELISA REAGENTS BLOOD TRANSFUSION PRODUCTS HEPATITIS AND HIV PRODUCTS INVESTIGATIONAL USE HIV PRODUCTS ELISA INSTRUMENTATION
MICROBIOLOGICAL INSTRUMENTS AND...

...RHEUMATOID FACTOR TESTS EPSTEIN BARR VIRUS TESTS TOXOPLASMA TESTS CYTOMEGALOVIRUS TESTS HERPES TESTS
BCA PRODUCTS Blood Grouping Sera-Anti-A, -B, -A, B, -A lectin, -H lectin -- For determination of blood groups. Rh Typing Sera-Anti-D, -C, -E, c, e, -CDE, Rh control -- For determination...For antibody screening & identification procedures and Compatibility Testing Rare Sera-Antisera for phenotyping of red blood cells. Anti-K, K, [-Fy.sup.a], [Fy.sup.b], [Jk.sup.a], [Jk.sup.b], M, N, S, s, [P.sub.1] Reagent Red Blood Cells-Antibody Screening cells (pooled, 2 or 3 Cell) Antibody Identification panels (11 & 16 vial...

...D) Immune Globulin-Available in vials or syringes Quality Control Kits-For daily testing or Blood Bank reagents Also-Proficiency Test Systems, Cellwasher, Continuing Education Programs, and Antibody Identification Software.
OXOID...

...638-7638 In MD (301) 997-2216
Diagnostic Products for the Clinical Microbiology Laboratory * Signal Blood Culture System * Anaerobic System * Streptococcal Grouping Kit--Latex
Agglutination Test for Group A, B, C...

...HCG-Serum/Urine * CARDS HCG-Urine * CARDS Strep A * CARDS LH * CARDS Mono * CARDS Occult Blood * CARDS Strep B * CARDS Chlamydia
COATED TUBE ENZYME IMMUNOASSAY Sensitive and rapid monoclonal-based visual color test for the qualitative detection of HCG in whole blood, urine or serum. * Beta-Quik Stat
LATEX AGGLUTINATION ASSAY Direct agglutination methodology for rapid, economical...

...from Packard instruments, software packages include routines for RIA, QC, triple label samples, receptor assays, blood flow analysis, single label DPM without quench curves, and chromotography analysis.
NEW AUTOMATED SAMPLE PROCESSOR...Instrumentation: VIRGO MR300: Microprocessor controlled, single wavelength easy-to-use microplate spectrophotometer with two position filter paddle plus data management cartridge.
VIRGO Blood Virus Kits * HIV-1 IFA (Antibody Detection) - Test Time: 90 minutes * HIV-1 IFA (Antibody...

...This rapid, visual dipstick enzyme immunoassay can now be performed with patient serum or whole blood specimens with less than 3 minutes hands-on time. The dipstick produces a permanent color...than 3 minutes hands-on time and can be used with patient serum or whole blood.
The QUIDEL Total IgE is supplied in 10 and 30 test kit sizes; each dipstick...

...hours before culture results are available. The test procedure is simple to perform and a clearly visible color change gives a positive result. An integral control bar appears each time the...

...Ohio 44145, or call (800) 321-9484 (except Alaska or Ohio call (216) 871-8900.)
BLOOD GAS ANALYZERS ABL330 85 [Micro]l sample. Measures pH, P [CO.sub.2] and P...

...meet the demands of cardiac and intensive care units. Measures potassium in addition to traditional blood gas parameters (including Hb). Includes CRT, keyboard, built-in barometer, printer, gas mixer, self-diagnostics...

...Simultaneously measures sodium (cNa +) and potassium (cK +) on 125 [Micro]l sample of undiluted whole blood, plasma, or serum. Results have identity to flame-based values for normal plasma, in full...

...RS232C interface.
Ica2 Ionized Calcium Analyzer Measures ionized calcium (Ca ++) and pH simultaneously on whole blood, plasma, or serum. Automatically calculates Ca ++ at standard 7.4 pH. Results in less than...

...rinsing. Monochromator optical system has no moving parts. Interfaces with Radiometer ABL300, 4 and 330 blood gas analyzers for complete oxygeneration/blood gas profiles. Economical operation with only one

inexpensive reagent.
OSM2 Hemoximeter [R] Provides fully automatic...

...operations and special programs including the exclusive program for the adjustment of display values to blood sample Sa[O.sub.2] values for patients with abnormal hemoglobin. 2-hour battery back...with menus to direct demographic input, plate read, report generation and complete epidemological profiling.
Arterial Blood Sampler Dual mode. Automatic self-filling or aspirating. Pre-heparinized, pre-sterilized and pre-packaged...

...plug, patient ID label, antiseptic prep pad, gauze, adhesive bandage and plastic bag for ice.
Blood Gas Quality Control 4 level Qualicheck [R] for complete evaluation of blood gas analyzer performance. System includes anaerobic transfer dispenser, logbook for data entry and exclusive temperature...in serum, plasma or urine. Same reagent as above with ascorbate oxidase added to remove ascorbic acid and a microbial lipase to remove turbidity due to triglycerides in serum.
CHEMISTRY CONTROL PRODUCTS AND STANDARDS RAI-TROL [TM] ASSAYED SERUM ...of positive and negative controls.
SEPTI-CHEK [R] SYSTEM Septic-Chek Slide Septi-Chek Blood Culture Bottle
The Septi-Chek Blood Culture System is a blood culture /subculture system permitting the qualitative determination of the presence of microorgnisms in a blood culture with simultaneous subculturing of the microorganisms on a slide containing three agar growth medias. This ...800) 321-4680, FAX (704) 465-4003
Sarstedt manufactures an extensive line of plastic blood collection products and prepared sample tubes containing anticoagulants and reagents. * Venous blood collection systems * Capillary blood collection systems * Specimen collection systems
SCANTIBODIES LABORATORY, INC. 9336 Abraham Way Santee, CA 92071, U.S ...

...or Call (619) 258-9300 Telex 695205 answ SCANTIBODI SDG Cable Address: SCANTIBODI
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SERUM * ANTIBODIES
SciMedx [R] 400 Ford Road Denville, New Jersey 07834
Ordering/Pricing/Technical Information...
...Unique hemolytic method
For the determination of Streptolysin O
Antibodies. Easy procedure--uses whole
blood or serum. No serial dilutions needed.
Hands on time--2 minutes. * ASO Control, Positive (300 IU... manufactured to exacting standards and perform with unmatched precision. These classic, but improved reagents, remove the guesswork from stain technology. Specially packaged for manual and automated slide production.
HISTOLOGY Exclusive high...

...of the clinical laboratory including: Chemistry, Cytology Hematology, Microbiology, Urinalysis, Serology, Anatomic Pathology, and Blood Bank. SOFTLAB is available in a range of expandable configurations designed to support labs from 50...moved in three dimensions by the robotic arm. Laboratory applications include:
* clinical lab (immunoassay)
* blood banks (blood grouping, serology)
* research labs (drug screening,
pharmaco-kinetics) Automated tasks include sample transfer, reagent addition, dilution...

...frame or with analysis instrumentation.
Applications include clinical chemistry assays (RIA, EIA, ELISA, FIA); blood bank (HIV, HbsAg); blood grouping; allergy testing; hybridoma technology; cytogenetics; ligand binding and many more.
TECHNICON INSTRUMENTS CORPORATION 511 Benedict...walk-away system operation plus the added safety of reduced physical contact with whole blood samples. Various size blood collection tubes are accepted by the ACT sampler, and with bar code reading, data storage, and ...or the day
after - but today - the same day you start the test. Example: Blood ID and susceptibility results the SAME DAY you receive the positive culture.

Example: Urine Identification and...	No.	Test Vol.
Thrombo-Wellcotest Kit	HA13	20
Thrombo-Wellcotest Latex only HA08 20 Blood Collection tubes	HA24	100
Buffer	AD01	100 ml

STAPHYLOCOCCUS AUREUS PRODUCTS
Cat. No. Test Vol.
Staphaurex...

...Osmometer
Unique flow-through system rapidly measures colloid osmotic pressure in serum or whole blood for detection of edema and/or protein/water imbalances.
* MACRODUCT [R] Sweat Collection System
Modern lightweight...

...Semi-automated analyzers for stat or routine measurements of glucose or lactate in whole blood. Inject 25 ul sample, read results 40 seconds
...unit uses glucose oxidase enzyme immobilized on membrane covering probe tip. It measures whole blood, plasma or serum; results are in mg/dl.
Lactate unit uses L-lactate oxidase enzyme immobilized on membrane. It measures whole blood, plasma or cerebrospinal fluid and reads in mmol/l.
Cuvette Thermometer Electronic thermometer for quick, precise...

9/3,K/61 (Item 21 from file: 149) Links
TGG Health&Wellness DB(SM)

01147691 Supplier Number: 06526681 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Checking the pulse of PitCon '88. (Pittsburgh Conference and Exposition on Analytical Chemistry and Applied Spectroscopy)

Barnes, Deborah
Science , v239 , n4846 , p1374(3)
March 18 ,
1988
Publication Format: Magazine/Journal
ISSN: 0036-8075
Language: English
Record Type: Fulltext Target Audience: Academic
Word Count: 3628 Line Count: 00356

...or a plastic tissue culture dish. For the former, the goal is not to have blood components stick, becaue clotting would result. For the latter, the objective is to get cultured...

/COULTER CLONE [R] leukocyte surface markers. This new line of reagents allows for whole blood samples to be lysed and fixed in just minutes. These reagents are uniquely formulated for Coulter Whole Blood Procedure and the automated Q-Prep Sample Preparation Workstation. Leukocyte cell surface staining is optimized...

...KC-4 [TM] Carcinoma Marker 6603077
Immunoperoxidase Kit
COULTER CLONE [R] 6603095
Immunoperoxidase Kit
Whole Blood Lysing Reagent Kit 6602764 (Flow cytometry or fluorescence microscopy)
300-TEST
Whole Blood Lysing Reagent Kit 6603152
(Flow cytometry only)
PBS Buffer Reagent (15 packets per 6603369 box...The instrument will read any assay between 340 and 630nm with a quick change of filter.
SOPHEIA 2000
The SOPHEIA 2000 is a high-speed bichromatic spectrophotometer that can store up...Controls
Other Complement Products
Whole Complement
Complement Components C1-C4
Stable Cellular Intermediates
Preserved Sheep Blood
Antibodies to Sheep Red Cells
INSTRUMENTATION BP-12 Photometer For reading microwell strips at 405 ...Tubes & Tube Processing System This unique lysis-centrifugation technology for isolation of microorganisms from the blood is proven more rapid and sensitive than conventional biphasic and radiometric broth blood culture systems. It offers simple, convenient, labor efficient procedure to save time and effort in...

...The first licensed kit for validating the presence of AIDS virus (HIV) antibodies in human blood. Test kit includes all necessary reagents and controls - no special equipment is needed. Provides prompt validation of initial HIV screening results. Identifies specific HIV antibodies in the patient's blood. May assist physicians in establishing the clinical diagnosis of AIDS.
* Western Blot Service This service...

...handling customized to meet your needs.
* HIV ELISA Testing System A highly sensitive and specific blood screening test to detect antibodies to HIV in an easy to use automated system.
*.Hepatitis ELISA Testing System A fast, accurate assay for screening blood for hepatitis B virus using the same labor efficient microplate technology and equipment as Du...

...CMV, EBV and HSV.
* HTLV-I A sensitive, Enzyme-linked Immunosorbent Assay that screens donated blood for antibodies to HTLV-1, a retrovirus associated with adult T-cell leukemia and neurological...

...models offer semi-automated or automatic, closed system sampling for the safe analysis of whole blood or serum. Each of the benchtop units offers a comprehensive data management package providing the...

...video tape highlights of a recent symposium on the detection of microbial pathogens in the
blood-stream. * Vista [TM] Immunoassay
System Video - describes new Vista magnetic separation technology for rapid, highly...That's why our customers

...PY," as the company calls it) of instruments that separate and analyze drugs in the blood, measure drug dissolution in the stomach, or pesticide residues in the environment. ...system can be used "to look at the amount of drug and drug metabolites in blood or urine," says Zymark's director of marketing, Richard Brown. The system is targeted toward...

...can lift up to 6 pounds. The robot can also be programmed to place and remove objects along an angular path as well as position them along a horizontal or vertical...

...the workplace," says George Sarossy, a consultant to Flow. The key component is a Gelaire filter that contains activated carbon from ground shells of coconuts that grow only in Sri Lanka...

...new fume hoods, air flows horizontally over the work surface. Vapors, fumes, and particles are trapped in the filter, which is located under the work surface. "Although this is a ductless system, it can ...

...hoods. Each is specifically designed to capture and retain a particular toxin (the Cl-200 filter is for formaldehyde), or combinations of toxins (the Cl-400 filter is for sulfur dioxide, sulfuric acid, hydrochloric acid, and other inorganic acids). Many of the...

...or to convert absorbed toxins to nontoxic, stable compounds. But laboratory workers must monitor the filter and change it when it becomes saturated. Flow is selling three models of the ductless...cells. Karger and his collaborators use a slightly different approach to separate proteins such as myoglobin, peptides, and oligonucleotides. They load the capillary tubing with SDS-polyacrylamide gel instead of buffer...

...hydrocarbons," says John Martin of Dohrmann. So a major concern of petroleum refiners is to remove as much of the sulfur as possible. And doing that means that they must constantly...

9/3,K/62 (Item 22 from file: 149) Links
TGG Health&Wellness DB(SM)

01056841 Supplier Number: 02804499 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Prehistoric blood residues: detection on tool surfaces and identification of species of origin.

Loy, Thomas H.
Science , v220 , p1269(3)
June 17 ,
1983
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Word Count: 1973 Line Count: 00200
Prehistoric blood residues: detection on tool surfaces and identification of species of origin.

Text:

Prehistoric Blood Residues: Detection on Tool Surfaces and Identification of Species of Origin

...four archeological sites in widely differing environments; 90 of them (86 percent) show definite surface blood deposits (Fig. 1). The artifacts examined are between 1000 and 6000 years old (2). Using...

...variety of tests, I have confirmed the presence of amino acids, hemoglobin (Hb), and red blood cells. I have developed inexpensive and reliable techniques to both detect the blood residues and identify the species of origin. Animal and plant tissue, feather barbules, and hair...

...some level of identification is possible. I have identified the species of origin of the blood residues by crystallizing the Hb fraction of the residue and comparing it with crystals prepared by the same technique from modern control blood smears of known species.

I have identified blood residues of the following species on prehistoric tools: human, caribou (Rangifer tarandus osborni), Columbian black...

...indicates the presence of caribou Hb (Fig. 2) and grizzly bear Hb (Fig. 3).

Suspected blood residues have been confirmed as proteinaceous on the basis of the following evidence: (i) their...

...analysis (6); and (v) a measured refractive index of greater than 1.55(7). Red blood cells were confirmed as such on the basis of their morphology and staining characteristics (8...

...power (12 to 30 diameters) microscopic examination of the surfaces; to the experienced eye, many blood films are readily apparent. Suspected blood deposits were then tested with a test strip, used medically in urinalysis (10), that is...

...ring structures and will give a positive reaction to compounds other than Hb, such as myoglobin and chlorophyll (11, 12). The presence of chlorophyll-containing algae could prove misleading. Nevertheless, for...

...not interfere with the test-strip reaction; blind tests have consistently discriminated between pristine and blood-smeared controls. Visually suspected and Hb-positive tools were then examined at high magnification (200 to 500 diameters) to observe the morphology of the deposit and the presence of red blood cells and other possible residues such as collagen, tissue, and feather or hair fragments. During...

...15). A salting-out procedure that has been successfully applied to the identification of mosquito blood-meal hosts has been modifed to permit the successful crystallization of the blood-residue Hb fraction of eluted solutions having Hb concentrations in the nanomole range (16). This procedure has been used to crystallize Hb from mammalian and avian species eluted from control blood smears, use-replicated tools aged for 6 months to 4 years, and archeological specimens. Blind...

...Hb crystal, permitting the identification of more than one species of origin from the same blood-smeared tool (12, 15, 18). This variation also gives rise to differences in the rates...

...pure human Hb and from aged human control smears. Routine preparation of crystals from control blood smears relies on multiple crystallization of similar forms and identification by autofluourescence and reaction to...

...in distinguishing between mammal and avian or reptilian bloods; generally, there are too few red blood cells present to permit the

reliable assignment of taxonomic identity (8).

The changes in these residual blood films over time may be summarized as follows. The exposure of a blood-covered tool to ultraviolet light from the sun and to air, which dries the blood, lyses most of the red blood cells and affects the tertiary denaturation of the serum proteins (22, 23). Burial of the...

...soils vary between pH 6 and 8, well within the range of stability of most blood proteins. Prolonged exposure to air changes the Hb from its oxygenated form to a more...

...form (23). To my knowledge, no upper time limit on the presence or reactivity of blood residues has been ascertained. The longevity of proteins, frozen blood, and dried tissue is well documented (25).

The likelihood of finding blood residues in many localities and the development of techniques that permit detection and identification to...

...be carried out in regions where acid soils interfere with the preservation of bone. Human blood residues jcan be used to extend the paleoanthropological knowledge of blood types without the need to rely upon mummies to provide samples. The finding of a wide variety of ancient blood proteins from dated contexts will assist in paleozoological and protein-evolutionary studies. The results of...

...I have done indicate that the residues are protected from microbial attack and ground-water removal while buried by electrostatic interactions with soil clay particles. In some cases, up to 50 percent of the original blood residue may be sequestered in the first 0.1 mm of soil; thus, much of...

...DfRu 8 and DcRu 38, two coastal midden sites, 20 out of 23 positive for blood; (ii) basalt chipped points and knives from various coastal midden sites, 12 out of 12 positive for blood; and (iii) chert and obsidian tools from two sites in the northern boreal forest (IgSk...

...and IgSk 8), 33 out of 36 and 25 out of 33, respectively, positive for blood.

3. G. Humason, Animal Tissue Techniques (Freeman, San Francisco, 1972), pp. 289-290.

4. C...

...M. Dixon and E. Webb, ibid. 16, 197 (1961).

16. R. Washino, Identification of Host Blood Meals in Arthropods (U.S. Army Medical Research and Development Command, Washington, D.C., 1977...

...Arbor, Mich., 1978), pp. 17-24. Bacteria and saprophytic spores may be incorporated in the blood residues and be confused with red blood cells, as was the case for P. Lewin and E. Cutz [Br. J. Dermatol. 94 examined, for, unlike the case for mummification, the drying and fixing of blood residues on tool surfaces is rapid, allowing little time for colonization and growth within the...

...the Friends of the British Columbia Provincial Museum.

14 December 1982

Photo: Fig. 1. Residual blood film (a) on the surface of an obsidian flake knife (b) (Photographed with incident light...

...2830 210 years.

Photo: Fig. 2. Hemoglobin crystals of caribou (Rangifer tarandus) grown from the blood film on the flake knife illustrated in Fig. 1: (a) photograph of a crystalline aggregate...

...drawing of the crystalline aggregate; (c and d) crystal forms grown from

a modern control blood smear by the same technique; (e and f) crystal forms illustrated in Washino (16).
Photo: Fig. 3. Hemoglobin crystals of grizzly bear (Ursus arctos horribilis) grown from the blood film on the flake knife illustrated in Fig. 1: (a) photograph of a crystalline aggregate...

...drawing of the crystalline aggregate; (c and d) crystal forms grown from a modern control blood smear by the same technique (16).
Photo: Fig. 4. Red blood cells in a plaque of dried blood removed from the surface of a flake knife (sample IgSk 8:85) excavated from a site...

...and illuminated in transmitted light with a quartz-halogen lamp and a Schott blue-violet filter to increase contrast).

Descriptors:
...blood--

9/3,K/63 (Item 1 from file: 444) Links
New England Journal of Med.

00116792

Current Concepts: Continuous Hemofiltration in the Treatment of Acute Renal Failure (Review Article)

Forni, L.G.; Hilton, P.J.
The New England Journal of Medicine
May 1 , 1997 ; 336 (18),pp 1303-1309
Line Count: 00266 Word Count: 03671

Text:
...peritoneal dialysis. (Ref. 2,3) Hemofiltration was first described in 1977 as a means of removing extracellular fluid from patients with edema refractory to diuretic agents. (Ref. 4) Continuous hemofiltration, combined... ...many superficial similarities to hemodialysis. In both techniques, access to the circulation is required and blood passes through an extracorporeal circuit that includes either a dialyzer or a hemofilter. However, the mechanisms by which the composition of the blood is modified differ markedly (Fig. 1). During dialysis (Fig. 1, upper panel), blood flows along one side of a semipermeable membrane as a solution of crystalloids is pumped along the other side of the membrane against the direction of the blood flow. Small molecules diffuse across the membrane from regions of greater concentration to regions of... ...plasma in order to establish a gradient from plasma to the fluid that promotes the removal of potassium ions from the patient's blood. The concentrations of substances that are to be removed completely (such as urea, creatinine, and phosphate) are zero in the dialysis fluid. The removal of salt and water is achieved by the creation of a transmembrane pressure gradient (with... ...rate of transfer across the membrane. A small molecule, such as urea (60 daltons), is cleared efficiently, and a larger molecule, such as creatinine (113 daltons), less well. Phosphate ions have such low rates of clearance that hyperphosphatemia is always a problem for patients on intermittent dialysis. Dialysis has no similarity... ...works in a different manner. (Ref. 6,7) In the simplest form of the procedure, blood under pressure passes down one side of a highly permeable membrane allowing both water and... ...of about 20,000 to pass across the membrane by convective flow, as in glomerular filtration. During hemofiltration, in contrast to hemodialysis, urea, creatinine, and phosphate are cleared at similar rates, and profound hypophosphatemia may develop unless the patient's phosphate intake is supplemented. Larger molecules such as heparin, insulin, myoglobin, and vancomycin, which are cleared from the blood in only

negligible quantities in a dialyzer, are cleared efficiently by the hemofilter... ...hemofiltration replacement fluid is shown in Table 1). If there is no need for the removal of fluid from the patient, the rate at which the replacement fluid is administered is... ...exactly with the rate of production of hemofiltrate. Usually, however, there is a need to remove fluid, because of either fluid overload or the clinical need to administer fluids to a... ...net loss of extracellular fluid is achieved by replacing less fluid through infusion than is removed by hemofiltration.|*Table 1.-Typical Composition of Hemofiltration Replacement Fluid *.**TABLE OMITTED...It is important to recognize that certain physical constraints affect hemofiltration as they do glomerular filtration. In both processes, the plasma component of the blood flowing through the circuit represents the sole source of the salt and water that are... ...to an increase in the concentration of both red cells and plasma protein in the blood of the extracorporeal circuit (Ref. 8); there is thus a tendency to produce viscous blood of high hematocrit and high colloid oncotic pressure at the distal end of the hemofilter. It is therefore generally unwise to induce a filtration rate that is more than 30 percent of the blood-flow rate. Keeping the ratio between the two rates under 25 percent minimizes the unwanted... ...form of the technique. (Ref. 4,9) The femoral artery and vein are cannulated, and blood passes through the hemofilter under the influence of arterial pressure alone (Fig. 2). Because the... ...disadvantages. First, a disconnection or leak in the circuit can result in rapid loss of blood. Second, the efficiency of hemofiltration depends on the arterial pressure, which is frequently low or... ...system is therefore determined mainly by factors outside the direct control of the physician. Low blood flow is associated with frequent clotting of the extracorporeal circuit, and the prolonged arterial cannulation... ...carries a risk of complications at the puncture site. Continuous arteriovenous hemofiltration often results in clearance rates as low as 10 to 15 ml per minute even in normotensive patients; clearance rates may drop to below 10 ml per minute if a patient has marked hypotension.|*Figure 2.-The Mechanisms of Hemofiltration and Hemodialysis with Filtration.No attempt has been made in this diagram to represent the automatic control of the rates of filtration and infusion of replacement fluid *.**FIGURE OMITTED... ...Continuous Arteriovenous Hemodialysis with Filtration
The recognition of the inadequacy of continuous arteriovenous hemofiltration when used alone led to the... ...hemofilter. (Ref. 10,11) In such a system, although a minor fraction of the circulating blood is cleared by the filter, the remainder undergoes dialysis, which results in an important improvement in the clearance of at least the smaller molecules that accumulate in renal failure. The inefficiency of arteriovenous... ...Continuous Venovenous Hemofiltration
The incorporation of an occlusive pump into the filtration circuit, together with the use of a femoral, subclavian, or internal jugular vein as the source of blood for the extracorporeal circuit, allows for control of the blood flow and the filtration rate without the limitations imposed by relying on the arterial pressure to move the blood. (Ref. 7,12,13) The use of a pump also averts the problems associated with cannulation of the femoral artery. This type of blood circuit, called venovenous hemofiltration, also incorporates safety devices to detect low inflow pressure and the presence of air in the circuit. Filtration rates in excess of 100 ml per minute can be achieved, though such rates are rarely required in the treatment of acute renal failure. The clear advantages of this system over simple arteriovenous hemofiltration have led to its widespread use in... ...Continuous Venovenous Hemodialysis with Filtration
Yet another system adds hemodialysis to venovenous hemofiltration in the same way that dialysis was added to continuous arteriovenous hemofiltration. (Ref. 14,15) There is no doubt that higher clearance rates of small solutes are achieved at any given blood flow by this modification, but it is questionable whether there are any advantages over continuous... ...and make it intermittent. If a continuous mode of treatment is appropriate, more than adequate clearance rates are possible with the simpler and cheaper system of continuous venovenous hemofiltration alone. With... ...is achieved by the insertion of a double-lumen catheter into a great vein. The blood pump is typically set to deliver approximately 125 ml per minute, and the most common... ...Hemofiltration removes virtually all ions from the plasma, including calcium, magnesium, and bicarbonate (Fig. 1); these must... ...with lactic acidosis, the exogenous lactate load from the replacement fluid, coupled with the continued removal of bicarbonate ions by the hemofilter, merely increases the plasma lactate

concentration and reduces the... ...represents nutrition. In patients with a robust circulation, intermittent hemodialysis can correct biochemical abnormalities and remove, in a short time, the extracellular fluid accumulated over 24 hours, although there is usually... ...restriction of nutrition. With continuous hemofiltration, however, almost any quantity of fluid can easily be removed over a 24-hour period. In computing the energy needs of a patient with acute... ...for the calorific value of the lactate content of regular hemofiltration replacement fluid. At a filtration rate of 25 ml per minute, the net contribution of lactate to nutrition is approximately...with replacement of the extracorporeal circuit every 2.5 days, the cost of consumables (hemofilter, blood and fluid lines, and replacement fluid) for each episode of acute renal failure in our... ...the nurse responsible for the patient; the treatment entails no additional labor costs. Hemodialysis with filtration, if undertaken so as to achieve plasma values for urea or creatinine similar to those...

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9/3,K/64 (Item 2 from file: 444) Links
New England Journal of Med.

00115742

Medical Progress: Acute Renal Failure (Review Article)

Thadhani, Ravi; Pascual, Manuel; Bonventre, Joseph V.
The New England Journal of Medicine
May 30 , 1996 ; 334 (22),pp 1448-1460
Line Count: 00659 Word Count: 09105

Text:
...more than 50 percent over the base-line value, a reduction in the calculated creatinine clearance of 50 percent, or a decrease in renal function that results in the need for... ...capacity of the glomerulus (Fig. 1). If renal tubular and glomerular function is intact but clearance is limited by factors compromising renal perfusion, the failure is termed prerenal failure, or prerenal... ...prerenal azotemia is a common cause of perioperative and postoperative renal dysfunction. Anesthesia decreases effective blood volume and, when accompanied by a reduction in mean arterial pressure, can lead to a decrease in renal blood flow.
Postrenal Causes
Acute renal failure ...causes of acute failure can be intraluminal, such as bilateral renal calculi, papillary necrosis, coagulated blood, bladder carcinoma, and fungus, or extraluminal, such as retroperitoneal fibrosis, colorectal tumor, and other malignant... ...and ischemic tubular necrosis represent a continuum, with the former leading to the latter when blood flow is sufficiently compromised to result in the death of tubular cells. As shown in... ...to kidney ischemia as a result of either extrarenal or intrarenal factors that compromise renal blood flow. Although most cases of ischemic acute renal failure are reversible if the underlying cause... ...wide spectrum of clinical conditions can result in a generalized or localized reduction in renal blood flow, thus increasing the likelihood of ischemic acute renal failure. The most common condition leading...in Table 2. In the absence of erythrocytes, heme-positive urine suggests the presence of myoglobin or hemoglobin, supporting a clinical diagnosis of rhabdomyolysis or transfusion reaction. The characteristics of casts...myoglobinuria, exposure to radiocontrast agents, sepsis, or obstruction, the urinary sodium concentration can be low.
Blood Tests
Other blood tests in addition to the measurement of urea nitrogen and creatinine in serum help in... ...Dopamine

Dopamine dilates renal arterioles and increases renal blood flow and the glomerular filtration rate. (Ref. 66,67) Dopamine has been administered for both the prevention and treatment of... in the near future. The renal vasculature is quite sensitive to endothelin, which reduces renal blood flow and the glomerular filtration rate. (Ref. 82) In animals, the administration of anti-endothelin antibodies or endothelin-receptor antagonists... ...the kidney against ischemic acute renal failure. (Ref. 83,84)
Medullary Hypoxia
Heterogeneity of intrarenal blood flow contributes to the pathophysiology of ischemic acute renal failure. An imbalance between the vasodilator nitric oxide and the vasoconstrictor endothelin may also impair medullary blood flow and contribute to tubular-cell damage. (Ref. 84-86) In the outer medulla, where... ...adherence of neutrophils to capillaries and venules. These changes lead to vascular congestion and decreased blood flow, (Ref. 88) tipping the tenuous balance between oxygenation and energy demand. (Ref. 62,89... ...the formation of casts and luminal obstruction and contributing to the reduction in the glomerular filtration rate. The severely damaged kidney can completely restore its structure and function. Spreading and dedifferentiation...cast formation. (Ref. 97) The casts then cause increased intratubular pressure and a reduced glomerular filtration rate. Loss of the epithelial-cell barrier and of the tight junctions between viable cells can result in back-leakage of the glomerular filtrate, further reducing the effective glomerular filtration rate. Arg-Gly-Asp peptides, which are hypothesized to act by preventing adhesion between cells...based on careful physical examination and invasive monitoring if appropriate. The decision to administer or remove fluids, however, is often difficult for the clinician, since both strategies can have detrimental consequences if pursued inappropriately. Although restoration of renal blood flow with intravenous volume resuscitation is ineffective in restoring renal function once tubular necrosis is...decreased hemodynamic instability, and (in patients with sepsis or multiorgan failure) an enhanced possibility of removing injurious cytokines. (Ref. 140,141) Another possible advantage of continuous-replacement therapies is the associated... ...nephrologists. Although cuprophane (cellulose-based) membranes have been used since the 1960s, their interaction with blood leads to an intense activation of the alternative pathway of complement. (Ref. 144) Activation of... ...vessels, and extravasation of neutrophils may aggravate tissue damage in the postischemic kidney. Furthermore, when blood comes in contact with a foreign material (such as cuprophane membranes during hemodialysis), the complement...

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142...

9/3,K/65 (Item 3 from file: 444) Links
New England Journal of Med.

00114321

Mechanisms of Disease: Hypoxia of the Renal Medulla -- Its Implications for Disease (Review Articles)

Brezis, Mayer; Rosen, Seymour.
The New England Journal of Medicine
Mar 9 , 1995 ; 332 (10),pp 647-655
Line Count: 00486 Word Count: 06708

Text:
...1.-Anatomical and Physiologic Features of the Renal Cortex and Medulla. The cortex, whose ample blood supply optimizes glomerular filtration, is generally well oxygenated, except for the medullary-ray areas devoid of glomeruli, which are supplied by venous blood ascending from the medulla. The medulla, whose meager blood supply optimizes the concentration of the urine, is poorly oxygenated. Medullary hypoxia results both from... ...The Renal Medullary Concentrating Mechanism as the Physiologic Basis of Medullary Hypoxia
Renal blood flow, a quarter of the cardiac output and the highest in the body in relation to organ weight, is directed mostly to the cortex to optimize glomerular filtration and the reabsorption of solute. By contrast, blood flow to the renal medulla is low, to preserve osmotic gradients and enhance urinary concentration... increases medullary partial pressure of oxygen from 16 to 35 mm Hg. Reducing the glomerular filtration rate, which diminishes the delivery of urine for the reabsorption of solute in medullary thick... ...Medullary hypoxia is an inevitable accompaniment of efficient urinary concentration. If excessive, medullary blood flow disrupts the osmolality gradients (built up by countercurrent exchange); if it is too slow... ...is an exact matching of oxygen supply and demand by precise regulation of the medullary blood flow and tubular work... ...Oxygen demand, a function of the rate of tubular reabsorption, is determined by the glomerular filtration rate and delivery of urine to the medullary thick limbs and regulation of transport by local mediators.|*Table 1.-Mechanisms Regulating Blood Flow and Tubular Transport in the Renal Medulla *.**TABLE OMITTED**|*Figure 3.-Vascular Anatomy of... ...tubular reabsorption of solute. Thus, lipid metabolites may be released by medullary hypoxia to alter blood flow and tubular transport for optimal concentration of the urine.
Other Vasoactive Mediators
The local... ...medulla. The balance of vasodilators and vasoconstrictors is important for the precise regulation of medullary blood flow.
Adenosine
Adenosine, released from ATP during hypoxia in any tissue, is generally a vasodilator... ...Ref. 23) In the kidney, adenosine induces both cortical vasoconstriction (with a reduction in glomerular filtration) and medullary vasodilatation (with inhibition of tubular transport), which suggests that it has an intrarenal homeostatic role that attenuates medullary hypoxia. (Ref. 13,14)
Tubuloglomerular Feedback
Glomerular filtration is controlled by tubuloglomerular feedback. Insufficient reabsorption of sodium by renal tubules activates (distally, at the macula densa) signals that constrict the glomerulus, reducing filtration and therefore the delivery and reabsorption of tubular solute. (Ref. 21) Thus, hypoxic impairment of reabsorption in the medullary thick limbs reduces glomerular filtration, which relieves medullary oxygen insufficiency whenever the workload exceeds capacity. A related response of the kidney to any decline in blood flow is the redistribution of the corticomedullary circulation for the benefit of medullary oxygenation. Superficial cortical blood flow (and glomerular filtration) is reduced, whereas juxtamedullary blood flow (and medullary oxygen supply) is maintained.
Growth Factors
Medullary tubules synthesize growth factors, such...ouabain (a potent inhibitor of Na(sup +)/K(sup +)-ATPase), or the cessation of glomerular filtration prevents medullary hypoxic injury in isolated perfused rat kidneys. (Ref. 32,33) Administering furosemide and reducing the glomerular filtration rate also attenuate medullary hypoxic injury in vivo. (Ref. 31,34)|*Table 2.-Agents and... ...of angiotensin II are detrimental to the medullary oxygen balance because they maintain the glomerular filtration rate (by preferential constriction of efferent glomerular vessels) while reducing oxygen delivery. (Ref. 39... ...contrast agents reduce medullary partial pressure of oxygen (Ref. 38) even though they increase medullary blood flow, (Ref. 11) probably because of osmotic diuresis and increased workload in medullary tubules. Prostanoids... ...interacts adversely with medullary hypoxia

(Ref. 40) and induces tubulointerstitial injury. (Ref. 41) Hemoglobin and myoglobin bind nitric oxide, thus promoting medullary vasoconstriction and hypoxia. (Ref. 42) Intrarenal vasoconstriction associated with...In humans, acute renal failure is characterized by focal nephron injury. Complete stoppage of renal blood flow (except in renal transplantation and aortic cross-clamping) or deliberate overdosing with nephrotoxins is... ...Renal Failure. The physiologic homeostatic signals shown on the left improve medullary oxygenation (by increasing blood flow and decreasing transport) and often contribute to reduced renal function. Some of the pathophysiologic... ...prostanoid-mediated medullary vasodilative response to local hypoxia. Volume depletion enhances the decrease in glomerular filtration mediated by tubuloglomerular feedback. In the kidneys of patients with myeloma, Bence Jones proteins (BJP... ...results from tubular obstruction (by casts); back-leakage of glomerular filtrate from the lumen to blood (through damaged epithelium); impaired intrarenal microcirculation, which occurs, for example, through the activation of tubuloglomerular...its structures have lower metabolic demands. In the cortex, the medullary rays, perfused by venous blood emerging from the medulla, are an expected target because they are located farthest from oxygen... ...Clinical Implications of Medullary Hypoxic Injury
Since quantifying intrarenal blood flow or oxygenation is not possible in clinical practice, the detection of medullary hypoxia and...into established renal failure. Polyuria with only a mild-to-moderate reduction in the glomerular filtration rate is sometimes the predominant clinical syndrome (in patients with toxic effects from aminoglycosides or ... ...the renal medulla. Activated protective mechanisms, such as reduced medullary tubular transport or increased medullary blood flow, also blunt the capacity to concentrate urine... ...mellitus. In sickle cell disease, medullary hypoxia and hypertonicity cause increased sickling of erythrocytes, increased blood viscosity, and decreased blood flow. Finally, in many forms of chronic renal disease, tubulointerstitial damage -- which correlates with progression... ...circle of impaired medullary oxygen balance caused by the hypertrophy of remnant nephrons. (Ref. 45) Clearly incomplete, these observations nevertheless suggest that medullary hypoxic injury has an important role in chronic... ...the concentration within the medulla of abnormal circulating proteins, such as light chains, hemoglobin, and myoglobin. The accumulation of lithium in the medulla contributes to polyuria in patients who receive this ...

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9/3,K/66 (Item 4 from file: 444) Links
New England Journal of Med.

00112259

Lack Of Immune Responsiveness To Bovine Serum Albumin In Insulin-Dependent Diabetes (Original Articles)

Atkinson, Mark A.; Bowman, Mark A.; Kao, Kuo-Jang; Campbell, Lalita; Dush, Paula J.; Shah, Shirish C.; Simell, Olli; Maclaren, Noel K.
The New England Journal of Medicine
Dec 16 , 1993 ; 329 (25),pp 1853-1858
Line Count: 00425 Word Count: 05868

...mediators of pancreatic beta-cell destruction in IDDM.
Methods. We measured the responses of peripheral-blood mononuclear cells to BSA and ABBOS or serum IgG anti-BSA antibodies (by particle-concentration ... ...rheumatoid arthritis, and systemic lupus erythematosus), and 48 normal subjects.
Results. The responses of peripheral-blood mononuclear cells to BSA or ABBOS were positive in 2 of 24 patients with new...

Text:
...of islet-cell destruction (Ref. 1,2). Therefore, we studied the proliferative responses of peripheral-blood mononuclear cells to BSA or ABBOS in order to explore further the possible pathogenic role... ...Methods
Patients
Blood samples were obtained from 210 subjects involved in ongoing studies of the natural history of... Tween-20, and 0.1 percent chicken ovalbumin. After 10 minutes, the unbound proteins were removed by vacuum filtration and the BSA-conjugated polystyrene beads were washed three times with the same buffer. The... ...percent from those for serum preincubated with ovalbumin.
Analysis of the Proliferative Response of Peripheral-Blood Mononuclear Cells
Two methods were used to assess cellular proliferation. In the first method, 1 x 10(sup 5) peripheral-blood mononuclear cells isolated from heparin-treated whole blood by Ficoll-Hypaque density centrifugation were cultured in round-bottomed 96-well tissue-culture trays... ...95 percent air and 5 percent carbon dioxide. In the second method, heparin-treated whole blood was centrifuged at 500 x g for 10 minutes, and phosphate-buffered saline was added to the cell pellet before peripheral-blood mononuclear cells were separated by Ficoll-Hypaque density centrifugation. The isolated cells were washed twice... ...cellular immunity (Ref. 20) that we have previously found to identify the responses of peripheral-blood mononuclear cells to glutamate decarboxylase in patients with IDDM, (Ref. 21) whereas the second method involves more stringent removal of potential sources of exogenous BSA or ABBOS peptide. For both methods, the cells were... ...above the mean value for cultures of cells from normal subjects. Only subjects whose peripheral-blood mononuclear cells responded to mitogenic stimulation by phytohemagglutinin were included in these analyses, since this... ...with established IDDM. *Figure 1.-Results of ABBOS-Induced and BSA-Induced Stimulation of Peripheral-Blood Mononuclear Cells from Normal Subjects, First-Degree Relatives of Patients with IDDM Who Were Positive... ...stimulation in response to BSA between these groups, we changed to a system wherein peripheral-blood mononuclear cells were washed before culture to reduce the amount of autologous plasma protein in... ...04). In a randomly selected subgroup of eight patients with new-onset IDDM, the peripheral-blood mononuclear cells of four responded to glutamate decarboxylase, in accordance with our previous findings (Ref... likely to be associated with cellular than serologic immunity, we analyzed the response of peripheral-blood mononuclear cells to BSA and ABBOS in patients with newly diagnosed IDDM, those with established... ...We were unable to demonstrate any reactivity of peripheral-blood mononuclear cells to BSA or ABBOS in patients with IDDM or subjects at increased risk...of autoantigens or natural self-proteins (e.g., double-stranded DNA, actin, tubulin, thyroglobulin, myosin, myoglobin, transferrin, interferon, and BSA) in patients with systemic lupus erythematosus and normal subjects (Ref. 35... ...In view of previous reports of the stimulation of peripheral- blood mononuclear cells from patients with IDDM by insulin, (Ref. 22) an islet-cell antigen with...

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22...

9/3,K/67 (Item 5 from file: 444) Links
New England Journal of Med.

00108695

Mechanisms of Disease: The Role Of Reperfusion-Induced Injury In The Pathogenesis Of The Crush Syndrome (Review Article)

Odeh, Majed.
The New England Journal of Medicine
May 16 , 1991 ; 324 (20),pp 1417-1422
Line Count: 00466 Word Count: 06440

Text:
...pressure on the limbs. It reflects the disintegration of muscle tissue and the influx of myoglobin, potassium, and phosphorus into the circulation. The syndrome is characterized by hypovolemic shock and hyperkalemia... ...the contribution of reperfusion to this process has only recently been appreciated. The reestablishment of blood flow after prolonged ischemia aggravates the tissue damage, either by causing additional injury or by... ...the onset of reperfusion (Ref. 11). Furthermore, reperfusion of ischemic and anoxic muscle with hypoxemic blood increases microvascular permeability and vascular resistance only slightly; only during subsequent perfusion with oxygenated blood are microvascular permeability and vascular resistance increased significantly (Ref. 11). These results lend additional support...About half of all capillaries in ischemic skeletal muscle contain leukocytes (Ref. 66). Most are trapped where the capillary endothelium bulges into the lumen (Ref. 66). When a leukocyte is trapped in a capillary, it forms a common area of contact with the endothelium, and it...in rhabdomyolysis and the crush syndrome is still not fully understood. Direct toxic effects of myoglobin or products of decomposition such as ferrihemate, tubular obstruction by myoglobin or uric acid crystals, and renal ischemia due to the release of vasoconstrictive mediators have... ...The iron component of myoglobin may participate in the kidney damage occurring in the crush syndrome. Recent studies using the glycerol model of myoglobinuric acute renal failure suggest that the iron component of myoglobin stimulates the formation of hydroxyl radicals, ultimately damaging proximal-tubular-cell membranes as a result... ...negative flora of the gut into the systemic circulation in the setting of decreased hepatic filtration (Ref. 75). This endogenous (gut-derived) endotoxin may play a central part in the multiple...

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...crush syndrome revisited (1940-1990). Nephron 1990; 55:97-103.
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9/3,K/68 (Item 6 from file: 444) Links
New England Journal of Med.

00107122

Current Concepts: Early Management Of Shock And Prophylaxis Of Acute Renal Failure In Traumatic Rhabdomyolysis (Medical Intelligence)

Better, Ori S.; Stein, Jay H.
The New England Journal of Medicine
Mar 22 , 1990 ; 322 (12),pp 825-829
Line Count: 00346 Word Count: 04787

Text:
...Seismic catastrophes leave in their wake survivors trapped under the rubble who

suffer from extensive muscle damage and its devastating sequelae of hemodynamic... ...In injured muscle, intramuscular pressure may exceed arterial blood pressure within minutes after trauma (Ref. 14). Ischemic interference with the regulation of muscle-cell... ...extracellular space may penetrate the injured muscles within hours or days after injury. It is clear, therefore, that after extensive muscle damage, only early, aggressive intravenous volume replacement will prevent irreversible...glomerular filtrate through damaged tubules also occurs (Ref. 25). Iron pigments derived from muscle and blood may also play a part in catalyzing the formation of free oxygen radicals (Ref. 26... ...in the kidney. Alkalization of the urine appears to be protective, presumably because hemoglobin and myoglobin are more soluble in an alkaline solution and the formation of casts is therefore retarded... ...at the rate of 1.5 liters per hour as soon as one of the trapped person's limbs has been freed. Another 45 to 90 minutes may pass before the entire body is carefully freed and the injured person is removed to a hospital. Once the systemic circulation has been stabilized and the presence of urine... ...the urine, whereas alkalinity is beneficial in these circumstances. Acetazolamide may be indicated when arterial blood pH rises above 7.45 after bicarbonate infusion, because this diuretic agent will correct metabolic... ...the treatment and by the effect of alkaline urine in protecting against the nephrotoxicity of myoglobin and urate. Unless there is a danger of hyperkalemic arrhythmia, the infusion of calcium is...6). Fasciotomy should be performed when intracompartmental pressure exceeds 40 mm Hg (or the diastolic blood pressure minus 30 mm Hg) and remains at that level for more than eight hours... ...with roughly the same degree of extensive crush injury to the lower limbs after being trapped for a mean period of approximately 12 hours. The seven men in the 1979 group... ...they were evacuated to a hospital, where they received forced solute-alkaline diuresis therapy. Despite clear-cut clinical and laboratory evidence of extensive rhabdomyolysis, none of these men had acute renal...We now reserve early fasciotomy for patients whose compartmental syndrome is due primarily to the clear-cut interruption of arterial circulation (ischemic myopathy). The introduction of intracompartmental manometry (Ref. 14) and... ...allocation of scarce personnel, time, and logistic support in rescue and salvage operations for people trapped under ruins, the following statistics may be extrapolated from our experience in 1982 (Ref. 5... ...eight-story concrete building killed within minutes about 80 percent of the approximately 100 people trapped in it. The fatalities were due mainly to trauma to the head and trunk, immobilization... ...buries people alive. Two of the men in the 1982 group with widespread rhabdomyolysis were trapped for 24 and 28 hours. An elderly woman who was trapped under rubble for five days but who was not wounded was saved by the Israeli...

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9/3,K/69 (Item 7 from file: 444) Links
New England Journal of Med.

00105042

Acute Rhabdomyolysis Associated With Cocaine Intoxication (Original Article)

Roth, David; Alarcon, Francisco J.; Fernandez, John A.; Preston, Richard A.; Bourgoignie, Jacques J.
The New England Journal of Medicine
September 15 , 1988 ; 319 (11),pp 673-677
Line Count: 00368 Word Count: 05079

Text:
...defined as a marked reduction in renal function, as indicated by an elevation of the blood urea nitrogen concentration (>11 mmol per liter) and the serum creatinine concentration (>177 micromole per...The mean blood pressure for the entire group was 130/82 mm Hg. Whereas hypertension (blood pressure >140/90 mm Hg) was equally prevalent (about 30 percent) in patients with and... ...of hematuria on microscopical examination. Six patients had more than 2+ proteinuria by dipstick. Urinary myoglobin levels were not ...mean hematocrit in these patients was 0.51 +/- 0.06. All patients had repeatedly negative blood and urine cultures for bacteria. The seven patients with disseminated intravascular coagulation were treated with...incidence of hypotension among patients with renal failure; the more severe hemoconcentration, indicative of fluid trapping and the depletion of intravascular volume; their lower serum calcium levels; their higher serum concentrations... ...rhabdomyolysis remains uncertain. Mechanisms for which there is some evidence include tubular obstruction by precipitated myoglobin, (Ref. 18) altered renal hemodynamics with a decreased glomerular filtration rate, (Ref. 19) and direct myoglobin toxicity (Ref. 18). In addition to myoglobin, other factors that may reinforce each other in the development of renal failure in individual...

9/3,K/70 (Item 8 from file: 444) Links
New England Journal of Med.

00103416

Case 31-1987: A 50-year-old woman was admitted to the hospital because of a seizure, fever, and acidosis (Case Records of the Massachusetts General Hospital)

Carpenter, Charles B.; Harris, Nancy L.
The New England Journal of Medicine
July 30 , 1987 ; 317 (5),pp 295-306
Line Count: 00827 Word Count: 11415

Text:
...before entry mild diarrhea occurred, and the temperature rose to 38.3 degreesC. Cultures of blood and urine were negative, and the fever was attributed to cytomegalovirus infection. During the week... ...she was taken to another hospital, where the temperature was 40.6 degreesC and the blood pressure 80/50 mm Hg. The arterial blood pH was 6.66. Hydrocortisone, sodium bicarbonate, gentamicin, and ampicillin were administered by vein, and... ...The temperature was 40 degreesC, the pulse was 126, and the respirations were 24. The blood pressure was 120/50 mm Hg...normal, 53 to 123). A test for plasma acetone was negative. A specimen of arterial blood, drawn while the patient was breathing oxygen by a face mask, revealed that the partial... ...renal ultrasonographic examination showed no evidence of hydronephrosis or other abnormality. A lumbar puncture yielded clear, colorless cerebrospinal fluid that contained no red cells and 2 lymphocytes per cubic millimeter; the... ...test for cryptococcal polysaccharide antigen was negative. Microscopical examination of a stained specimen of the blood buffy coat showed no microorganisms; examination of a stained specimen of urine revealed a moderate... ...Specimens of blood, urine, and cerebrospinal fluid were obtained for culture; an indwelling catheter was inserted into the... ...further seizures were observed. The temperature per rectum was 36.7 degreesC. The lungs were clear; a systolic murmur was again heard. The urinary volume was more than 1 liter daily... ...less than 1 percent MB fraction. All bacteriologic cultures remained negative. A specimen of arterial blood, drawn while the patient was breathing oxygen by a face mask, showed that the PaO... ...and the pH 7.45. A specimen of ileostomy drainage gave a + test for occult blood. Another x-ray film of the chest on the ...left base; the abdomen was unchanged; the ileostomy drainage again gave a + test for occult blood. The urine gave a +++ test for protein and a trace-positive test for glucose; examination... ...specimen of urine the protein was 3.1 g; a test on the urine for

myoglobin was positive. Another specimen of arterial blood, drawn while the patient was breathing oxygen by a face mask, revealed that the PaO... ...less than 1 percent MB fraction. The ileostomy drainage gave a negative test for occult blood. Another x-ray film of the chest on the fourth hospital day disclosed an increase... ...A test for IgG antibody to hepatitis A virus was positive. The indwelling catheter was removed from the bladder. Cefotaxime was administered by vein. That afternoon another grand-mal seizure occurred... liter. A test for hepatitis B surface antigen and antibody was negative. A culture of blood drawn on the third hospital day was negative. A specimen of arterial blood, drawn while the patient was breathing oxygen by a face mask, disclosed that the PaO... ...the inability to demonstrate other viscera raised the question of ascites. Another lumbar puncture yielded clear, colorless cerebrospinal fluid that contained 120 red cells and no white cells per cubic millimeter...heard over both lungs, without crackles or wheezes; the heart and abdomen were unchanged. The blood pressure rose to 210/120 mm Hg. The hematocrit was 30.3 percent, and the... ...operating room, where a large left occipitoparietal hematoma was evacuated. Microscopical examination of the material removed disclosed only hematoma. An x-ray film of the chest showed improvement, with minimal patchy... ...the LDH 654 U, and the alkaline phosphatase 108 U per liter. Two cultures of blood drawn on the fifth hospital day were negative. An x-ray film of the chest obtained on the 11th hospital day disclosed clearing of the left-lung infiltrate and no change in the residual right-lung infiltrate. Another...process characterized by the appearance of a moderate number of fragmented red cells on the blood smear, the low levels of fibrin-split products, the evidence for hemolysis in the depleted... ...thromboxane response, (Ref. 9) and thromboxane may be a major factor in the reduced glomerular filtration rate produced by the drug (Ref. 9). A direct inhibition of prostacyclin synthesis by cyclosporine... intracerebral hemorrhage on the left side occurred in association with a sudden increase in systemic blood pressure and required neurosurgical evacuation of a large occipitoparietal hematoma. In a subsequent CT scan... ...a ruptured aneurysm, I assume that the primary process involved or was close to major blood vessels. The low-absorptive lesions were not thought to be abscesses or hemorrhages but could... ...an immunocompromised host, and it would explain the presence of atypical lymphocytes in the peripheral blood in this patient (Ref. 13). In such a case the lesions start as collections of the patient's course. Perhaps the organisms were cleared from the blood by the gentamicin but persisted in the white matter of the brain...well. In addition, there was extensive gray-matter infarction throughout the brain, compatible with low blood flow. A perivascular infiltrate of atypical large lymphoid cells was evident within some of the... ...parieto-occipital region *. **FIGURE OMITTED** *Figure 4. Brain (x 500). Red cells surround a small blood vessel; its wall is infiltrated by atypical large lymphoid cells, suggesting the diagnosis of a...nodules. Sections of the gastric nodules showed lymphoma infiltrating both the mucosa and submucosa. Numerous blood vessels in the submucosa were invaded by large, markedly atypical lymphoid cells (Fig. 5). Sections... ...prominent nucleoli and relatively abundant cytoplasm, consistent with immunoblasts. *Figure 5. Stomach (x 200). A blood vessel is infiltrated by neoplastic lymphoid cells *. **FIGURE OMITTED... ...of the kidneys confirmed the presence of fibrin deposits in the walls of some small blood vessels. This constellation of changes, although focal, is consistent with the hemolytic uremic syndrome. Finally... ascertain. The extensive renal infarction and the intracerebral hemorrhage were both associated with involvement of blood vessels by lymphoma, but it seems possible that the vascular endothelial-cell abnormality responsible for... ...interval to the development of lymphoma (Ref. 18-20). The process in this patient was clearly a malignant lymphoma, with evidence in the stomach tumor of a monoclonal B-cell population... ...Myoglobin casts, renal allograft

Cited References

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